UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

MAR 03 2020

Ms. Sylvia Vanderspek, Chief
Air Quality Planning Branch
Air Quality Planning and Science Division
California Air Resources Board
P.O. Box 2815
Sacramento, California 95812

Dear Ms. Vanderspek:

EPA concurs with the State's request to exclude data showing exceedances of the 1987 24-hour PM_{10} National Ambient Air Quality Standards (NAAQS) on January 20, 2018, February 11, 2018, February 19, 2018, April 11-12, 2018, April 16, 2018, April 19, 2018, April 29-May 1, 2018, May 11, 2018, May 25, 2018, June 17, 2018, June 23, 2018, June 28, 2018, July 9, 2018, October 3, 2018, October 6, 2018, and November 29, 2018, at multiple monitors in the Imperial County, CA nonattainment area pursuant to the Exceptional Events Rule (EER).

The submittals from California Air Resources Board (CARB) and Imperial County Air Pollution Control District (ICAPCD), dated October 29, 2019, included documentation that the January 20, 2018, February 11, 2018, February 19, 2018, April 11-12, 2018, April 16, 2018[1], April 19, 2018, April 29-May 1, 2018, May 11, 2018, May 25, 2018, June 17, 2018, June 23, 2018, June 28, 2018, July 9, 2018, October 3, 2018, October 6, 2018, and November 29, 2018 exceedances were caused by exceptional events due to a high wind dust event. After thoroughly reviewing the information you provided, we agree that the State's submittals meet the demonstration criteria and the schedule and procedural requirements in the EER. The basis for our concurrence is set forth in the enclosed technical support document. My staff will enter concurrence flags for these data into the U.S. Environmental Protection Agency's (EPA's) Air Quality System database.

EPA's concurrence is a preliminary step in the regulatory process for actions that may rely on these data and does not constitute final Agency action. If EPA completes a notice-and-comment rulemaking for an action that is influenced by the exclusion of the PM_{10} data specified in this concurrence, EPA's concurrence letter and accompanying technical support document would be included in the record as part of the technical basis for the proposed action. If we receive comments, we must consider and respond to those comments before taking final regulatory action. When EPA issues that regulatory action, it is a final Agency action subject to judicial review.

[1] On December 6, 2019, CARB sent a revised Appendix C for the April 16, 2018 event to EPA (email from Theresa Najita, California Air Resources Board, to Gwen Yoshimura, EPA Region IX, "Imperial PM_{10} Exceptional Event – Revised Appendix C for April 16, 2018 documentation," dated December 6, 2019). The version of Appendix C originally submitted on October 29, 2019 contained an incorrect date and referenced but did not include a complaint from a member of the public to the District. The revised Appendix C corrected these administrative errors.

We appreciate the solid technical analysis and collaborative approach used to develop these submittals. If you have any questions or wish to discuss this matter further, please contact me at (415) 972-3183, or Meredith Kurpius at (415) 947-4534.

Sincerely,

Elizabeth J. Adams
Director, Air and Radiation Division

Enclosure

cc (via email): Webster Tasat, CARB
Theresa Najita, CARB
Reyes Romero, ICAPCD
Monica Soucier, ICAPCD

ENCLOSURE: TECHNICAL SUPPORT DOCUMENT FOR THE EPA'S CONCURRENCE ON PM_{10} EXCEEDANCES MEASURED IN IMPERIAL COUNTY ON JANUARY 20, 2018, FEBRUARY 11, 2018, FEBRUARY 19, 2018, APRIL 11-12, 2018, APRIL 16, 2018, APRIL 19, 2018, APRIL 29-MAY 1, 2018, MAY 11, 2018, MAY 25, 2018, JUNE 17, 2018, JUNE 23, 2018, JUNE 28, 2018, JULY 9, 2018, OCTOBER 3, 2018, OCTOBER 6, 2018, AND NOVEMBER 29, 2018 AS EXCEPTIONAL EVENTS

EXCEPTIONAL EVENTS RULE REQUIREMENTS

Pursuant to the 2005 amendment of Clean Air Action (CAA) Section 319, the EPA promulgated revisions to the Exceptional Events Rule (EER) in October 2016. 81 FR 68216 (October 3, 2016).[1] The 2016 EER revised definitions, criteria for the EPA's approval, procedural requirements, and requirements for air agency demonstrations set forth at 40 CFR §50.1(j)-(r); §50.14; and §51.930 of the Code of Federal Regulations (CFR). The EPA reviews the information and analyses in the air agency's demonstration package using a weight of evidence approach and decides to concur or not concur. The air agency's demonstration must satisfy all of the EER criteria for the EPA to concur with excluding the air quality data from regulatory determinations.

Under 40 CFR §50.14(c)(3)(iv)(A)-(E), the air agency demonstration to justify data exclusion must include:

- A narrative conceptual model that describes the event(s) causing the exceedance or violation and a discussion of how emissions from the event(s) led to the exceedance or violation at the affected monitor(s);
- A demonstration that the event affected air quality in such a way that there exists a clear causal relationship between the specific event and the monitored exceedance or violation;"
- Analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site at other times" to support requirement (B) above;
- A demonstration that the event was both not reasonably controllable and not reasonably preventable; and
- A demonstration that the event was a human activity that is unlikely to recur at a particular location or was a natural event.[2]

[1] The 2016 EER supersedes the 2007 EER, and natural and exceptional events data handling guidance developed prior to the 2007 EER, as well as the 2013 Interim Exceptional Events Implementation Guidance. 81 FR 68220.

[2] A natural event is defined at 40 CFR §50.1(k) as "an event and its resulting emissions, which may recur at the same location, in which human activity plays little or no direct causal role. For purposes of the definition of a natural event, anthropogenic sources that are reasonably controlled shall be considered to not play a direct role in causing emissions."

In addition, the air agency must meet several procedural requirements, including:

1. Submission of an Initial Notification of Potential Exceptional Event and flagging of the affected data in the EPA's Air Quality System (AQS) as described in 40 CFR §50.14(c)(2)(i);

2. Completion and documentation of the public comment process described in 40 CFR §50.14(c)(3)(v)(A)-(C); and

3. Implementation of any applicable mitigation requirements as described in 40 CFR §51.930.[3]

Because event-related anthropogenic emissions can contribute to an exceedance attributable to high winds, high wind dust events are a unique type of natural event. For this reason, demonstrations for high wind dust events must first establish that the event was not reasonably controllable or preventable in order to demonstrate that the event is a natural event or that there is a clear causal relationship between the event and an exceedance. Therefore, this Technical Support Document (TSD) presents the requirements of 40 CFR §50.14(c)(3)(iv)(A)-(E) in a slightly different sequence than as codified in the CFR.

Narrative Conceptual Model

The EPA expects that a narrative conceptual model of the event will describe and summarize the event and provide context for analyzing the required statutory and regulatory technical criteria. Air agencies may support the narrative conceptual model with summary tables or maps. For particles with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM_{10}) high wind dust events, the EPA recommends that the narrative conceptual model identify the event as a natural event and provide a general description of the affected area. It should also discuss the interaction of wind speed, potential source areas, and PM_{10} concentrations across the area during the event and, under 40 CFR §50.14(a)(1)(i), the regulatory significance of the requested data exclusion.

Not Reasonably Controllable or Preventable (nRCP)

40 CFR §50.14 (b)(8)(i) requires that air agencies establish that the event be both not reasonably controllable *and* not reasonably preventable. For high wind dust events, the EPA separately evaluates prevention and control. Provided the demonstration establishes that a high wind dust event occurred, a case-by-case justification that the event was not reasonably *preventable* is not required.[4] The EPA considers an event not reasonably *controllable* if "reasonable measures to control the impact of the event on air quality were applied at the time of the event" and will "assess the reasonableness of available controls for anthropogenic sources based on information as of the date of the event."[5]

[3] This requirement only applies for those areas identified in accordance with the provisions of 40 CFR §51.930.
[4] 40 CFR §50.14 (b)(5)(iv).
[5] 40 CFR §50.14 (b)(8)(iii)-(iv).

The EPA evaluates whether a high wind dust event was not reasonably controllable by considering the wind speed associated with the event with respect to the EPA's 25 miles per hour (mph) high wind threshold (or Administrator-approved alternate threshold),[6] and an assessment of reasonable controls on contributing anthropogenic sources in place at the time of the event. Generally, "controls on an anthropogenic source shall be considered reasonable in any case in which the controls render the anthropogenic source as resistant to high winds as natural undisturbed lands in the area."[7]

Except where a State is obligated to revise a state implementation plan, the EPA will also consider "all enforceable control measures implemented in accordance with a state implementation plan…approved by EPA within 5 years of the date of the event, that address the event-related pollutant and all sources necessary to fulfill the requirements of the [CAA] for the state implementation plan…to be reasonable controls."[8] The EPA also will not "require a State to provide a case-specific justification to support the not reasonably…controllable criterion for emissions-generating activity that occurs outside the State's jurisdictional boundaries."[9] Also, the EPA will generally consider documentation for large-scale, high-energy high wind dust events to be sufficient with respect to the not reasonably controllable criterion provided the evidence showing the nature and extent of the event, that the event was associated with a dust storm and is the focus of a dust storm warning, has sustained winds that are greater than or equal to 40 mph, and has reduced visibility equal to or less than 0.5 miles.[10]

In general, for the not reasonably controllable criterion, demonstrations must include:

- Identification of the natural and anthropogenic sources of emissions causing and contributing to the monitored exceedance or violation, including contribution from local sources. 40 CFR §50.14 (b)(8)(viii)(A);

- Identification of the relevant state implementation plan, tribal implementation plan, federal implementation plan, or other enforceable control measures in place for the sources identified and the implementation status of those controls. 40 CFR §50.14 (b)(8)(viii)(B); and

- Evidence of effective implementation and enforcement of the measures identified. 40 CFR §50.14 (b)(8)(viii)(C).[11]

[6] 40 CFR §50.14 (b)(5)(iii): "The Administrator will accept a high wind threshold of a sustained wind of 25 mph…States can identify and use an Administrator-approved alternate area-specific high wind threshold that is more representative of local or regional conditions, if appropriate."
[7] 40 CFR §50.14 (b)(5)(v).
[8] 40 CFR §50.14 (b)(8)(v)-(vi).
[9] 40 CFR §50.14 (b)(8)(vii).
[10] 40 CFR §50.14 (b)(5)(vi).
[11] These requirements do not apply if the event meets the criteria applicable to wildfires, large-scale and high-energy high wind dust events, and stratospheric intrusions.

Clear Causal Relationship (CCR) and Supporting Analyses

The EPA considers a variety of evidence when evaluating whether there is a clear causal relationship between the specific event and the monitored exceedance or violation. For PM_{10} high wind dust events, air agencies should compare the PM_{10} data requested for exclusion with historical concentrations at the monitor to support the showing of a clear causal relationship between the event and the monitored data. In addition to providing this information on the historical context for the event-influenced data, air agencies should further support the clear causal relationship criterion by providing evidence that the high wind dust event's emissions from natural or reasonably controlled anthropogenic sources were transported to the monitor. In some cases, air agencies may also need to provide quantitative evidence of the contribution of the high wind dust event's emissions to the monitored PM_{10} exceedance or violation.

Natural Event or Event Caused by Human Activity That is Unlikely to Recur

According to the CAA and the EER, an exceptional event must be "an event caused by human activity that is unlikely to recur at a particular location *or* a natural event."[12] The 2016 EER defines a high wind dust event as "an event that includes the high-speed wind and the dust that the wind entrains and transports to a monitoring site,"[13] and states that the EPA "will consider high wind dust events to be natural events in cases where windblown dust is entirely from natural undisturbed lands in the area or where all anthropogenic sources are reasonably controlled."[14] Once an agency provides evidence that a high wind dust event occurred and demonstrates that the event was not reasonably controllable and there is a clear causal relationship between the measurement under consideration and the event, the EPA expects minimal documentation, such as a statement that criteria have been met, to satisfy the "natural event" element.

[12] 42 U.S.C. 7619(b)(1)(A)(iii) and 40 CFR §50.1(j) (emphasis added).
[13] 40 CFR §50.1(p).
[14] 40 CFR §50.14(b)(5)(ii).

OVERVIEW OF EVENTS

On July 12, 2019, the California Air Resources Board (CARB) submitted an Initial Notification of Potential Exceptional Event (Initial Notification) prepared by Imperial County Air Pollution Control District (ICAPCD) for numerous exceedances of the 24-hour PM_{10} National Ambient Air Quality Standard (NAAQS) that occurred at monitoring stations within Imperial County, CA in 2018.[15] Upon review of this submittal, EPA determined that data exclusion of some of the exceedances could have regulatory significance for a maintenance plan and redesignation request for the 24-hour PM_{10} NAAQS and worked with ICAPCD and CARB to identify the relevant exceedances.

The July 12, 2019, Initial Notifications included exceedances of the 24-hour PM_{10} NAAQS that occurred at multiple monitoring stations within Imperial County, CA on January 20, 2018, February 11, 2018, February 19, 2018, April 11-12, 2018, April 16, 2018, April 19, 2018, April 29-May 1, 2018, May 11, 2018, May 25, 2018, June 17, 2018, June 23, 2018, June 28, 2018, July 9, 2018, October 3, 2018, October 6, 2018, and November 29, 2018. On October 29, 2019, CARB submitted exceptional events demonstrations prepared by ICAPCD for these exceedances. [16] Table 1 summarizes these exceedances.

In the demonstrations, ICAPCD stated and provided evidence that the PM_{10} exceedances measured on these days were caused by emissions from high wind dust events.

Table 1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m^3)
January 20, 2018	Brawley	06-025-0007-3	163
January 20, 2018	Calexico	06-025-0005-3	225
February 11, 2018	Calexico	06-025-0005-3	172
February 19, 2018	Calexico	06-025-0005-3	182
February 19, 2018	Brawley	06-025-0007-3	224
February 19, 2018	Westmorland	06-025-4003-3	193
February 19, 2018	Niland	06-025-4004-3	230
April 11, 2018	Niland	06-025-4004-3	191
April 12, 2018	Calexico	06-025-0005-3	182
April 12, 2018	Brawley	06-025-0007-3	183
April 12, 2018	El Centro	06-025-1003-4	159
April 16, 2018	Brawley	06-025-0007-3	407
April 16, 2018	Calexico	06-025-0005-3	407
April 16, 2018	El Centro	06-025-1003-4	173

[15] Email from Sylvia Vanderspek, California Air Resources Board, to Gwen Yoshimura, Jennifer Williams, and Randall Chang, EPA Region IX, "FW: Imperial INI to EPA," dated July 12, 2019.
[16] Letter from Dr. Michael T. Benjamin, California Air Resources Board, to Elizabeth Adams, EPA Region IX, dated October 29, 2019, with enclosure. In the remainder of this document, "Demonstration" refers to the section of the enclosure corresponding to the Event Day(s) (i.e., the exceedance date).

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m^3)
April 16, 2018	Niland	06-025-4004-3	222
April 16, 2018	Westmorland	06-025-4003-3	351
April 19, 2018	Brawley	06-025-0007-3	334
April 19, 2018	Calexico	06-025-0005-3	178
April 19, 2018	Westmorland	06-025-4003-3	186
April 29, 2018	Brawley	06-025-0007-3	310
April 29, 2018	Niland	06-025-4004-3	243
April 29, 2018	Westmorland	06-025-4003-3	206
April 30, 2018	Brawley	06-025-0007-3	270
April 30, 2018	Niland	06-025-4004-3	162
April 30, 2018	Westmorland	06-025-4003-3	207
May 1, 2018	Brawley	06-025-0007-3	157
May 11, 2018	Brawley	06-025-0007-3	335
May 11, 2018	El Centro	06-025-1003-4	166
May 11, 2018	Niland	06-025-4004-3	215
May 11, 2018	Westmorland	06-025-4003-3	414
May 25, 2018	Calexico	06-025-0005-3	156
May 25, 2018	Brawley	06-025-0007-3	159
June 17, 2018	Brawley	06-025-0007-3	168
June 23, 2018	Niland	06-025-4004-3	163
June 28, 2018	Niland	06-025-4004-3	173
July 9, 2018	Brawley	06-025-0007-3	230
July 9, 2018	Calexico	06-025-0005-3	307
July 9, 2018	El Centro	06-025-1003-4	256
July 9, 2018	Niland	06-025-4004-3	181
July 9, 2018	Westmorland	06-025-4003-3	185
October 3, 2018	Westmorland	06-025-4003-3	169
October 6, 2018	Brawley	06-025-0007-3	181
November 29, 2018	Niland	06-025-4004-3	331
November 29, 2018	Westmorland	06-025-4003-3	296

A. Event Day: January 20, 2018

Table A.1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m³)
January 20, 2018	Brawley	06-025-0007-3	163
January 20, 2018	Calexico	06-025-0005-3	225

1. Narrative Conceptual Model

Sections I and II of the Demonstration provided a narrative conceptual model of the event and included characteristics of Imperial County, such as general description of the geography, topography, and meteorology, and a description and map of the ambient air quality monitoring network and meteorological sites (see Figure A.1).

Figure A.1: Monitoring Sites in Imperial County[17]

Sections I and II of the Demonstration further described the event-specific characteristics and included ICAPCD's conclusion that the exceedances measured at the Brawley and Calexico monitoring stations (Brawley, Calexico) were caused by "a forecasted Pacific storm with an

[17] Demonstration, Section I

associated cold front [that] brought gusty westerly winds across central and southern California…, [and] [s]trong gusty westerly winds, preceding the cold front, [that] generated emissions from within the open mountain ranges and surrounding open natural deserts within San Diego and Imperial counties,"[18] and that the exceedances qualify as an exceptional event under the EER. ICAPCD summarized the event and included a table of hourly PM_{10} concentrations measured on January 19-21, 2018 at monitoring sites in Riverside, Imperial and Yuma counties, a 72-hour time-series of PM_{10} concentration profiles for monitoring sites in the area, two 72-hour time series of wind speed and wind gust measurements from select meteorological sites in the area, and 11:00 PM PST January 19, 2018 6-hour, 2:00 AM PST January 20, 2018 6-hour, and 6:00 PM PST January 20, 2018 24-hour NOAA Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) back trajectories from monitoring sites in the area.

Based on the information described above, ICAPCD's Demonstration satisfies the narrative conceptual model criterion of the EER.

Table A.2: Documentation of Narrative Conceptual Model

Exceedance Date	**Demonstration Citation**	**Quality of Evidence**	**Criterion Met?**
January 20, 2018	Sections I and II	Sufficient	Yes

2. Not Reasonably Controllable or Preventable (nRCP)

High wind threshold

ICAPCD provided documentation showing that sustained wind speeds associated with the event were above the EPA's 25 mph high wind threshold on January 20, 2018. For example, maximum sustained wind speeds of 38 mph with gusts of 48 mph were measured at the El Centro NAF National Weather Service (NWS) station.

Identification of contributing sources

ICAPCD analysis shows satellite imagery and HYSPLIT back trajectories originating from the five PM_{10} monitoring sites in Imperial County.[19] The Demonstration states that "[a]s strong gusty westerly winds blew over open natural mountains and desert areas west of Imperial County, fugitive windblown dust affected all air quality monitors within Imperial County."[20]

Identification of reasonable controls

In Section V, ICAPCD provided detailed information on the current set of required controls in the Imperial County PM_{10} nonattainment area, including information on nonattainment status and a description and timeline of implementation of Regulation VIII, which includes Rules 800, 801, 802, 803, 804, 805, and 806. Regulation VIII was adopted by ICAPCD on October 16, 2012, and

[18] Demonstration, Section II
[19] Demonstration, Section II
[20] Demonstration, Section II

Rules 800, 804, 805 and 806 were approved by the EPA as Best Available Control Measure (BACM) level rules on April 22, 2013, with an effective date of May 22, 2013. Regulation VIII addresses the desert open areas managed by the Bureau of Land Management (BLM), U.S. Border Patrol, the California Department of Parks, and construction, open areas, track out, paved and unpaved roads, and agricultural operations.[21] ICAPCD also notes that "[b]oth permitted and non-permitted sources are required to comply with Regulation VIII requirements that address fugitive dust emissions."[22]

As identified above, the Demonstration states that the potential source area includes "open natural mountains and desert areas west of Imperial County." This statement is supported by the HYSPLIT back trajectory analysis, which shows the trajectories passing through a portion of San Diego County and northern Mexico before continuing into Imperial County.[23] Based on a review of satellite imagery, this area appears to predominately natural desert that transitions to mountainous terrain over 3000 ft in elevation. San Diego County is currently a PM_{10} attainment area with no federally required PM_{10} SIP control measures. San Diego County does have local control measures that reduce PM (including PM_{10}) from sources such as: Rule 50 Visible Emissions, Rule 51 Nuisance, Rule 52 Particulate Matter, Rule 54 Dust and Fumes, Rule 55 Fugitive Dust Control, and Rule 101 Burning Control. An assessment of reasonable controls in northern Mexico is not required, as sources in Mexico are not within ICAPCD's or CARB's jurisdictional boundaries.[24]

Evidence of effective implementation and enforcement

ICAPCD provided information on source-permitted inspections and public complaints that occurred during the event and stated in the Demonstration that it evaluated inspection reports, air quality complaints, compliance reports, and other documentation and found no evidence of unusual anthropogenic-based PM_{10} emissions. ICAPCD also stated that "[t]here were no complaints filed on January 20, 2018, officially declared as [a] No Burn Day, related to agricultural burning, waste burning or dust."[25]

Not reasonably preventable

While high wind dust events do not require a case-specific justification that the event was also not reasonably preventable,[26] ICAPCD's Demonstration discusses this criterion and states that "[t]he PM_{10} exceedance[s] measured at the Brawley and Calexico monitors w[ere] caused by naturally occuring strong gusty westerly winds that transported windblown dust into Imperial County and other parts of southern California from areas located within the Sonoran Desert regions to the west-southwest and west of Imperial County" and, therefore, a specific showing of the not reasonably preventable criterion is not required.[27]

[21] Demonstration, Section V
[22] Demonstration, Section V
[23] Demonstration, Section II
[24] 40 CFR part 50.14 (b)(8)(vii)
[25] Demonstration, Section V
[26] 40 CFR part 50.14 (b)(5)(iv)
[27] Demonstration, Section VI

EPA conclusion regarding nRCP criterion

Generally, State Implementation Plan (SIP) rules must be enforceable and must not relax existing requirements (see CAA sections 110(l) and 193). Rules implementing BACM and Best Available Control Technologies (BACT) are required in serious PM_{10} nonattainment areas (see CAA sections 189(a)(1) and 189(b)(1)). ICAPCD regulates a PM_{10} nonattainment area classified as serious (see 40 CFR part 81), so the applicable SIP should contain rules that implement BACM on contributing anthropogenic sources of windblown dust.

On July 8, 2010,[28] the EPA approved versions of the rules that comprise Regulation VIII, but required revisions to Rules 800, 804, 805, and 806. On April 22, 2013, the EPA fully approved these rule revisions into the California SIP. [29] The final rule also stated that the "EPA's preliminary view is that the Regulation VIII rules as revised in October 2012 constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the exceptional events rule, including reasonable and appropriate control measures on significant contributing anthropogenic sources."[30] The most recent BACM determinations for the rules are within five years of the date of the event, and the EPA considers the controls to constitute reasonable controls for this event.

The EPA also considers the control measures in place in San Diego County to be reasonable controls for this event based on San Diego's PM_{10} attainment status and the back-trajectory analysis showing the trajectory passing through the portion of San Diego County that appears to be predominately natural desert and mountainous areas with few sources of anthropogenic windblown dust. Therefore, the EPA is satisfied that the nRCP criterion of the EER is met.

Table A.3: Documentation of nRCP

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
January 20, 2018	Section II, V, and VI	Sufficient	Yes

3. Clear Causal Relationship (CCR)

Comparison with historical concentrations

In Section IV of the Demonstration, ICAPCD included a comparison with historical concentrations, as required by 40 CFR §50.14(c)(3)(iv)(C). In the Demonstration, ICAPCD compared the event-related PM_{10} concentrations with concentrations from 2010-2018 by highlighting the event day compared to routine data throughout the year and the season in which the exceedances occurred (January – March). The analysis also showed that the 24-hour PM_{10} concentrations on the exceedance day were "clearly outside the normal concentration levels when comparing to similar event days and non-event days."[31]

[28] 75 FR 39366
[29] 78 FR 23677
[30] 78 FR 23682
[31] Demonstration, Section IV

Evidence of transport of high wind dust emissions from the source area to the monitor

In addition to analyses presented in Sections I and II, Section III of the Demonstration included: a "ramp-up" analysis of the event data that showed satellite imagery, general wind speed and gust in the upwind areas, locations of NWS advisories, and hourly PM_{10} concentrations measured at monitoring sites in Imperial County; a 72-hour time series of PM_{10} concentrations measured at monitoring sites in Imperial County and visibility from a regional NWS station; two tables of wind speed, gust, and direction measurements at selected meteorological sites in the area and PM_{10} concentrations from monitoring sites in Imperial County; and Air Quality Index (AQI) information.

Appendix A of the Demonstration included NWS urgent weather messages and advisories. Consistent with the discussion in Sections I, II, and III of the Demonstration, NWS Phoenix, AZ issued a wind advisory for southwestern Imperial County at 12:50 AM MST on January 20, 2018, which remained in effect until 4:00 AM PST on January 20, 2018 and states that "[s]trong wind gusts will produce patchy dense blowing dust which will lead to sharply restricted visibility and hazardous driving conditions." NWS San Diego, CA issued a wind advisory for the southern California area, including San Diego County mountains and deserts, at 3:55 AM PST on January 20, 2018, which remained in effect from 10:00 AM to 6:00 PM PST on January 20, 2018 and states that there would be "[w]inds [at] 20 to 30 mph with gusts to 45 mph [and] [i]solated gusts to 55 mph" and "[b]lowing sand and blowing dust in the deserts."

Appendix B of the Demonstration included Quality Controlled Local Climatological Data for NWS airport sites in Imperial, Riverside, San Diego, and Yuma counties. These data show reduced visibility and weather types of haze (HZ) observed at 2:47, 2:54, and 2:56 hours at the El Centro NAF NWS station.

Appendix C of the Demonstration included Imperial County web postings of potential elevated PM concentrations, weather story information from the San Diego NWS office, AQI information, the Imperial County No Burn Day determination for January 20, 2018, and the public comment notice (affidavit).

In the Demonstration, ICAPCD concluded that "high gusty westerly winds transported fugitive emissions from open natural Mountain and desert areas, located within San Diego County and Imperial County (all part of the Sonoran Desert)."[32]

EPA conclusion regarding CCR criterion

The analyses included in the Demonstration, specifically, the evaluation of several years of PM_{10} monitoring data, numerous time-series graphs and tables of wind speed, wind gusts, wind direction, and hourly PM_{10} concentrations throughout Imperial County, the "ramp-up" analysis, NOAA HYSPLIT back trajectory analysis, NWS station reports of reduced visibility and haze,

[32] Demonstration, Section VI

and the issuance of NWS wind advisories sufficiently demonstrate that high wind speeds in upwind areas caused emissions from natural desert areas and reasonably controlled local anthropogenic sources to the west and southwest of Brawley and Calexico, which were transported to Brawley and Calexico and caused exceedances of the 24-hour PM_{10} NAAQS. Therefore, the Demonstration shows a clear causal relationship between the high wind dust event emissions and the exceedances measured at Brawley and Calexico.

Table A.4: Documentation of CCR

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
January 20, 2018	Section I, II, III, IV, VI Appendices A, B, and C	Sufficient	Yes

4. Natural Event

ICAPCD states in the Demonstration that "the PM_{10} exceedance[s] that occurred at Brawley and Calexico on January 20, 2018, w[ere] caused by the transport of windblown dust into Imperial County by strong… winds associated with a storm that passed through the region…[and] [a]t the time of the event, anthropogenic sources, within Imperial County were reasonably controlled with BACM…[and] [t]he event therefore qualifies as a natural event,"[33] and provided evidence that the emissions originated from open natural mountains and desert areas west of Imperial County and that reasonable controls on contributing anthropogenic sources were in place at the time of the event.

Natural event conclusion

The CCR and nRCP analyses demonstrate that event-related emissions of windblown dust were from natural undisturbed lands and that upwind anthropogenic sources were subject to reasonable controls at the time of the event. Therefore, the EPA is satisfied that the high wind dust event met the definition of a natural event.

Table A.5: Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
January 20, 2018	Section I, II, III, IV, V, VI	Sufficient	Yes

5. Schedule and Procedural Requirements

In addition to technical Demonstration requirements, 40 CFR §50.14(c) and 40 CFR §51.930 specify schedule and procedural requirements an air agency must follow to request data exclusion. Table A.6 outlines the EPA's evaluation of these requirements.

Table A.6: Schedules and Procedural Criteria

[33] Demonstration, Section VI

Criterion	Reference	Demonstration Citation	Criterion Met?
Did the agency provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Sufficient	Yes
Did the agency submit an Initial Notification of Potential Exceptional Event and flag the affected data in the EPA's Air Quality System (AQS)?	40 CFR §50.14 (c)(2)(i)	Sufficient	Yes
If applicable, did the initial notification and demonstration submittals meet the deadlines for data influenced by exceptional events for use in initial area designations? Or the deadlines established by the EPA during the Initial Notification of Potential Exceptional Events process, if applicable?	40 CFR §50.14 Table 2 40 CFR §50.14 (c)(2)(i)(B)	Sufficient	Yes
Was the public comment process followed and documented? • Did the agency document that the comment period was open for a minimum of 30 days? • Did the agency submit to the EPA any public comments received? • Did the state address comments disputing or contradicting factual evidence provided in the demonstration?	40 CFR §50.14 (c)(3)(v)	Sufficient	Yes
Has the agency met requirements regarding submission of a mitigation plan, if applicable?	40 CFR §51.930 (b)	NA	NA

6. Conclusion

The EPA has reviewed the documentation provided by CARB and ICAPCD to support the conclusion that a high wind dust event caused exceedances of the 24-hour PM_{10} NAAQS at Brawley and Calexico on January 20, 2018. The EPA has determined that the flagged exceedances at these monitoring stations on this day meet the definition of an exceptional event: the high wind dust event affected air quality in such a way that there exists a clear causal relationship between the event and the monitored exceedances, was not reasonably preventable or controllable, and meets the definition of a natural event. The EPA has also determined that CARB and ICAPCD have satisfied the schedule and procedural requirements for data exclusion.

B. Event Day: February 11, 2018

Table B.1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m³)
February 11, 2018	Calexico	06-025-0005-3	172

1. Narrative Conceptual Model

Sections I and II of the Demonstration provided a narrative conceptual model of the event and included characteristics of Imperial County, such as general description of the geography, topography, and meteorology, and a description and map of the ambient air quality monitoring network and meteorological sites (see Figure B.1).

Figure B.1: Monitoring Sites in Imperial County[34]

Sections I and II of the Demonstration further described the event-specific characteristics and included ICAPCD's conclusion that the exceedance measured at the Calexico monitoring station

[34] Demonstration, Section I

(Calexico) was caused by "two different systems…a forecasted low-pressure shortwave with a trailing dry cold front brought strong northeasterly winds during the morning hours of February 11, 2018. Although the wind speeds reduced as the system diminished during the mid-day hours, shifting wind patterns influenced by a second system produced moderate gusty westerly winds during the evening hours across southeastern California…Although winds lowered during the evening hours, suspended particulates continued within the extreme southeastern region, including Imperial County, northern Mexico and Yuma Arizona. The shift between systems caused a stagnant and slow shifting of suspended particulates between Mexico and Imperial County as lower winds allowed for deposition of particulates onto the Calexico monitor,"[35] and that the exceedance qualifies as an exceptional event under the EER. ICAPCD summarized the event and included a table of hourly PM_{10} concentrations measured on February 10-12, 2018, at monitoring sites in Riverside, Imperial and Yuma counties, a 72-hour time-series of PM_{10} concentration profiles for monitoring sites in the area, two 72-hour time series of wind speed and wind gust measurements from select meteorological sites in the area, and 12-hour NOAA Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) back trajectories from monitoring sites in the area at 1:00 AM, 10:00 AM, and 6:00 PM – 11:00 PM PST on February 11, and 2:00 AM PST on February 12.

Based on the information described above, ICAPCD's Demonstration satisfies the narrative conceptual model criterion of the EER.

Table B.2: Documentation of Narrative Conceptual Model

Exceedance Date	**Demonstration Citation**	**Quality of Evidence**	**Criterion Met?**
February 11, 2018	Sections I and II	Sufficient	Yes

2. Not Reasonably Controllable or Preventable (nRCP)

High wind threshold

ICAPCD provided documentation showing that sustained wind speeds associated with the event were above the EPA's 25 mph high wind threshold late on February 10 and on February 11, 2018. For example, maximum sustained wind speeds of 32 mph with gusts of 41 mph were measured at the Needles Airport National Weather Service (NWS) station between 2200 hours on February 10, 2018, and 0100 hours on February 11, 2018.

ICAPCD's documentation also showed winds above 26 mph with gusts of up to 42 mph at the Mountain Springs Grade wind measurement site during the late evening hours of February 11, 2018, when a second peak PM_{10} concentration was observed at Calexico. However, HYSPLIT trajectories that show transport from Mexico to Calexico during the later hours are to the east of the Mountain Springs Grade site.

[35] Demonstration, Section II

Identification of contributing sources

ICAPCD analysis shows satellite imagery and HYSPLIT back trajectories originating from the five PM_{10} monitoring sites in Imperial County and from the Yuma Supersite monitor in Yuma County, Arizona, as well as some HYSPLIT trajectories originating from monitoring sites in Riverside County, the Mexicali monitoring site, and Mexicali Airport.[36] The Demonstration states that "strong gusty north northeast winds blew over open natural desert areas northeast of Imperial County during the morning hours, followed by gusty west southwest winds during the late afternoon to evening hours."[37] The conceptual model further states that "[t]he first system with an associated dry cold front generated emissions from within the open natural desert areas within Riverside County and Arizona during the morning hours of February 11, 2018. During the evening hours, of February 11, 2018, a second system generated emissions from within the natural open mountains and desert areas within northern Mexico, specifically across Mexicali and the Laguna Salada."[38]

Identification of reasonable controls

In Section V, ICAPCD provided detailed information on the current set of required controls in the Imperial County PM_{10} nonattainment area, including information on nonattainment status and a description and timeline of implementation of Regulation VIII, which includes Rules 800, 801, 802, 803, 804, 805, and 806. Regulation VIII was adopted by ICAPCD on October 16, 2012, and Rules 800, 804, 805 and 806 were approved by the EPA as Best Available Control Measure (BACM) level rules on April 22, 2013, with an effective date of May 22, 2013. Regulation VIII addresses the desert open areas managed by the Bureau of Land Management (BLM), U.S. Border Patrol, the California Department of Parks, and construction, open areas, track out, paved and unpaved roads, and agricultural operations.[39] ICAPCD also notes that "[b]oth permitted and non-permitted sources are required to comply with Regulation VIII requirements that address fugitive dust emissions."[40]

As identified above, the Demonstration states that the potential source area includes "open natural desert areas within Riverside County and Arizona…[and] the natural open mountains and desert areas within northern Mexico." This statement is supported by the HYSPLIT back trajectory analysis, which shows the morning and afternoon trajectories on February 11, 2018, primarily passing through portions of Nevada and Arizona, then far eastern San Bernardino County, followed by eastern and central portions of Riverside County before continuing into Imperial County.[41] Based on a review of satellite imagery, this area appears to be predominately natural desert and mountainous terrain.

Trajectories after 6:00 PM PST on February 11, 2018, travel south over eastern Riverside county and through Imperial County into Mexico, including Mexicali and areas to the south such as the Laguna Salada area, before circling back towards the Imperial County monitoring sites.

[36] Demonstration, Section II
[37] Demonstration, Section II
[38] Demonstration, Section II
[39] Demonstration, Section V
[40] Demonstration, Section V
[41] Demonstration, Section II

Riverside County can be divided into three areas according to the air basin each segment falls within: the western portion lies within the South Coast Air Basin (under South Coast Air Quality Management District's (SCAQMD) jurisdiction); the central portion, which is referred to as "Coachella Valley," lies within the Salton Sea Air Basin (also under SCAQMD jurisdiction); the eastern portion lies within the Mojave Desert Air Basin and includes the Joshua Tree area (under SCAQMD jurisdiction) and the Palo Verde/Blythe area (under Mojave Desert Air Quality Management District's (MDAQMD) jurisdiction).[42]

The South Coast Air Basin portion of Riverside County is part of the larger former serious PM_{10} nonattainment area (encompassing all of the South Coast Air Basin) that the EPA has redesignated to attainment.[43] Because the South Coast Air Basin had been a serious PM_{10} nonattainment area for which an attainment date extension had been granted under CAA section 188(e),[44] fugitive dust sources in that portion of Riverside County are subject to BACM and Most Stringent Measures (MSM) controls, including SCAQMD Rule 403 (Fugitive Dust) and SCAQMD Rule 1186 (PM_{10} Emissions from Paved and Unpaved Roads, and Livestock Operations). Rule 403 establishes best available fugitive dust control measures to reduce fugitive dust emissions associated with agricultural operations, construction/demolition activities, earth-moving activities, track out of bulk materials onto public paved roadways, and open storage piles or disturbed surface areas. Rule 1186 establishes controls to reduce dust from traffic on paved and unpaved roads, including requirements for purchase of PM_{10} efficient street sweepers; removal of material on roadways; curbing; treatment of medians; and paving, stabilization or speed restrictions for unpaved roads. The PM_{10} maintenance plan for the South Coast Air Basin relies upon the continued implementation of the BACM controls, including Rules 403 and 1186.

The Coachella Valley portion of Riverside County has not been redesignated and is currently a serious PM_{10} nonattainment area for which an attainment date extension has been granted under CAA section 188(e).[45] Fugitive dust sources in Coachella Valley are subject to BACM/MSM measures, including SCAQMD Rules 403 and 1186 (described above) and SCAQMD Rule 403.1 (Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources) and dust ordinances adopted by the various cities in Coachella Valley and by Riverside County. Rule 403.1 includes especially stringent provisions for implementation when wind speeds exceed 25 mph, and the rule also serves as a backstop for local jurisdictions' enforcement of their fugitive dust ordinances. The local dust ordinances are based on a model fugitive dust control ordinance developed by the Coachella Valley Association of Governments (CVAG), local governments and the SCAQMD. The ordinances typically require dust control plans for each construction project needing a grading permit; plans to pave or chemically treat unpaved surfaces if daily vehicle trips exceed 150; imposition of 15 mph speed limits for unpaved surfaces if daily vehicle trips do not exceed 150; paving or chemical treatment of unpaved parking lots; and actions to discourage use of unimproved property by off-highway vehicles.

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[42] CARB, California Almanac of Emissions and Air Quality - 2013 Edition, p. 1-4, 1-14 through 1-16; CARB figure titled "California Air Districts and Counties," available at https://ww3.arb.ca.gov/maps/adistbw.pdf; SCAQMD Rule 103 (Definition of Geographical Areas).
[43] 78 FR 20868, at 20875 (April 8, 2013) (proposed redesignation); 78 FR 38223 (June 26, 2013) (final redesignation).
[44] 68 FR 19316
[45] 68 FR 19318

The eastern portion of Riverside County is currently designated as unclassifiable for the PM_{10} NAAQS and, as such, is not subject to federally required PM_{10} SIP control measures. However, the control measures required under SCAQMD Rules 403 and 1186, described above, apply within the Joshua Tree area because the Joshua Tree area lies within SCAQMD jurisdiction. The Palo Verde area is subject to MDAQMD jurisdiction, and fugitive dust sources in that area are subject to controls under Mojave Desert AQMP fugitive dust rules including Rules 401 (Visible Emissions) and 403 (Fugitive Dust).

The desert portion of San Bernardino County (i.e., not including the western portion of the county located within the South Coast Air Basin) is divided into two moderate PM_{10} nonattainment areas: the San Bernardino nonattainment area and the Trona nonattainment area. The San Bernardino nonattainment area covers nearly all the desert portion of the county other than the northwest corner, which is designated separately as the Trona nonattainment area. Moderate nonattainment areas are required to implement reasonably available control measures (RACM) as needed for attainment. The Mojave Desert Air Quality Management District (MDAQMD) regulates fugitive dust sources within the desert portion of San Bernardino County and has adopted certain rules to reduce fugitive emissions. MDAQMD Rules 401 (Visible Emissions) and 403 (Fugitive Dust) apply throughout the MDAQMD and establish 20% opacity and property-line visible emission limits. MDAQMD Rule 403.1 (Fugitive Dust Control for the Mojave Desert Planning Area) was adopted to meet RACM requirements and establishes specific control requirements to reduce fugitive dust from construction and demolition activities, public unpaved roads, weed abatement, limestone processing facilities, and BLM lands. Rule 403.1 applies within the Mojave Desert Planning Area, a 4,000 square mile subarea within the 18,000 square mile San Bernardino nonattainment area. The Mojave Desert Planning Area includes nearly all the major population centers within the desert portion of the county along with most of the commercial and industrial activities. Rule 403.1 is enforceable by MDAQMD but has not been approved by EPA as part of the California state implementation plan.

An assessment of reasonable controls in Nevada, Arizona, and Mexico is not required, as sources in these areas are not within the State's jurisdictional boundaries.[46]

Evidence of effective implementation and enforcement

ICAPCD provided information on source-permitted inspections and public complaints that occurred during the event and states in the Demonstration that it evaluated inspection reports, air quality complaints, compliance reports, and other documentation and found no evidence of unusual anthropogenic-based PM_{10} emissions. ICAPCD also states that "[t]here were no complaints filed on February 11, 2018, officially declared as No Burn Day, related to agricultural burning, waste burning or dust."[47]

[46] 40 CFR §50.14(b)(8)(vii)
[47] Demonstration, Section V

Not reasonably preventable

While high wind dust events do not require a case-specific justification that the event was also not reasonably preventable,[48] ICAPCD's Demonstration discusses this criterion and states that "[t]he PM_{10} exceedance measured at the Calexico monitor were caused by naturally occurring gusty northeasterly and southwesterly winds that transported windblown dust into Imperial County and other parts of southern California from areas located within the Sonoran Desert regions to the north, northeast and south, southwest of Imperial County" and, therefore, a specific showing of the not reasonably preventable criterion is not required.[49]

EPA conclusion regarding nRCP criterion

Generally, State Implementation Plan (SIP) rules must be enforceable and must not relax existing requirements (see CAA sections 110(l) and 193). Rules implementing BACM and Best Available Control Technologies (BACT) are required in serious PM_{10} nonattainment areas (see CAA sections 189(a)(1) and 189(b)(1)). ICAPCD regulates a PM_{10} nonattainment area classified as serious (see 40 CFR part 81), so the applicable SIP should contain rules that implement BACM on contributing anthropogenic sources of windblown dust.

On July 8, 2010,[50] the EPA approved versions of the rules that comprise Regulation VIII, but required revisions to Rules 800, 804, 805, and 806. On April 22, 2013, the EPA fully approved these rule revisions into the California SIP.[51] The final rule also stated that the "EPA's preliminary view is that the Regulation VIII rules as revised in October 2012 constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the exceptional events rule, including reasonable and appropriate control measures on significant contributing anthropogenic sources."[52] The most recent BACM determinations for the rules are within five years of the date of the event, and the EPA considers the controls to constitute reasonable controls for this event.

In addition to our review of nRCP for Imperial County, the EPA also reviewed the nRCP criterion for sources within Riverside County and San Bernardino County, because back-trajectory analyses show trajectories passing through Riverside County and San Bernardino County. For Riverside County, the EPA considers the control measures in place to be reasonable controls for this event based on (i) the implementation of SCAQMD BACM/MSM controls for fugitive dust sources in the Coachella Valley serious PM_{10} nonattainment area, and (ii) the implementation of SCAQMD and MDAQMD fugitive dust controls in the unclassifiable portion of Riverside County.

The most recent BACM/MSM determinations for SCAQMD Rules 403, 403.1 and 1186, and the local dust ordinances vary from 2005 (for Rules 403.1 and the local dust ordinances) to 2008

[48] 40 CFR part 50.14 (b)(5)(iv)
[49] Demonstration, Section VI
[50] 75 FR 39366
[51] 78 FR 23677
[52] 78 FR 23682

(Rule 403) to 2012 (Rule 1186).[53] Although the most recent BACM/MSM determinations for the rules and ordinances are not within five years of the date of the event, the EPA considers these controls to continue to constitute reasonable controls based on our review of analogous rules in other PM_{10} nonattainment areas and because the latest available emissions inventory information indicates that the significant source categories remain the same in Coachella Valley as they were when the BACM determinations were last made.[54]

The EPA considers the control measures in place in the Joshua Tree and Palo Verde areas of eastern Riverside County to be reasonable controls for this event based on the unclassifiable designation for the area for the PM_{10} NAAQS and the back-trajectory analyses showing the trajectories passing through predominantly natural desert and mountainous areas with few sources of anthropogenic windblown dust.

The applicable fugitive dust control measures in place in eastern San Bernardino County include MDAQMD Rules 401 (Visible Emissions) and 403 (Fugitive Dust).[55] Although the San Bernardino nonattainment area is a moderate nonattainment area and the EPA has not determined that MDAQMD Rules 401 and 403 represent RACM-level of control, the EPA considers the generalized dust control requirements in Rules 401 and 403 to be reasonable controls given the extent to which eastern San Bernardino County is comprised of essentially uninhabited desert lands and mountainous areas, including the 2,400 square mile Mojave National Preserve.

Therefore, the EPA is satisfied that the nRCP criterion of the EER is met.

Table B.3: Documentation of nRCP

Exceedance Date	**Demonstration Citation**	**Quality of Evidence**	**Criterion Met?**
February 11, 2018	Section II, V, and VI	Sufficient	Yes

[53] 70 FR 43663 (July 25, 2005) and 70 FR 69081 (November 14, 2005) (proposed and final approval of amendments to the PM_{10} SIPs for the South Coast and Coachella Valley and revisions to Rule 403.1 and the local dust ordinances); 73 FR 12639 (March 10, 2008) (final approval of revisions to Rule 403); and 77 FR 13495 (March 7, 2012) (final approval of revisions to Rule 1186).
[54] TSD Addendum (December 2019); CARB, CEPAM: 2016 SIP – Standard Emission Tool, Emissions Projections for Riverside County, September 6, 2019.
[55] MDAQMD Rule 403.1 (Fugitive Dust Control for the Mojave Desert Planning Area) includes more specific control requirements but does not apply in the eastern portion of San Bernardino County.

3. Clear Causal Relationship (CCR)

Comparison with historical concentrations

In Section IV of the Demonstration, ICAPCD included a comparison with historical concentrations, as required by 40 CFR §50.14(c)(3)(iv)(C). In the Demonstration, ICAPCD compared the event-related PM_{10} concentrations with concentrations from 2010-2018 by highlighting the event day compared to routine data throughout the year and the season in which the exceedance occurred (January – March). The analysis also showed that the 24-hour PM_{10} concentration on the exceedance day was "clearly outside the normal concentration levels when comparing to similar event days and non-event days."[56]

Evidence of transport of high wind dust emissions from the source area to the monitor

In addition to analyses presented in Sections I and II, Section III of the Demonstration included: plots comparing PM_{10} from Calexico and El Centro and $PM_{2.5}$ from Calexico and Mexicali during February 10-12, 2018, and during a burning event on December 31, 2017-January 2, 2018; a "ramp-up" analysis of the event data that showed satellite imagery, general wind speeds, gusts, and direction in the upwind areas, locations of NWS wind advisories, and locations meteorological features (e.g., fronts) on February 11, 2018; a 72-hour time series of PM_{10} concentrations measured at monitoring sites in Imperial County and visibility from regional NWS stations; tables of wind speed, gust, and direction measurements at selected meteorological sites in the area and PM_{10} concentrations from monitoring sites in Imperial County; and the hourly AQI measured at Calexico on February 11, 2018.

Appendix A of the Demonstration included NWS urgent weather messages and advisories. Consistent with the discussion in Sections I, II, and III of the Demonstration, NWS Phoenix, AZ issued a wind advisory for the eastern areas of Riverside and Imperial counties at 7:00 PM PST on Saturday February 10, 2018, which remained in effect until 7:00 AM PST on Sunday February 11, 2018, and states that "…[s]trong northerly winds will push through the Lower Colorado River Valley starting mid to late evening, lasting through the overnight. Wind gusts to 40 mph are likely across portions of the area, mainly affecting eastern areas of Riverside and Imperial Counties in California. As a result, a Wind Advisory has been issued for the area from this evening through mid Sunday morning. Blowing dust will likely affect areas within the Advisory…"[57]

No advisories were issued for the evening of February 11, 2018. NWS Phoenix, AZ issued a forecast discussion at 2:38 PM MST on February 11, 2018, that noted that, "Winds over the forecast area have weakened considerably compared to earlier this morning," and discussed aviation concerns for Southeast California and Southwest Arizona (including Imperial Airport and Blythe Airport) stating that "Gusty north winds will be the primary aviation concern this morning with little other impacts beyond this afternoon…The pressure gradient will rapidly weaken such that light and variable winds will be common by late afternoon/evening."[58] NWS

[56] Demonstration, Section IV
[57] Demonstration, Appendix A
[58] Demonstration, Appendix A

San Diego, CA issued a forecast discussion at 9:00 PM PST on February 11, 2018, stating that "A weak cold front will bring cloudy, cool weather tonight and Monday along with light showers at times. Gusty winds will impact the mountains and deserts… West winds were already fairly strong in the [San Bernardino] mountains (Big Bear Airport 17G25mph) and High Deserts (Hesperia 11G32)."[59] NWS San Diego also issued a wind advisory for the Apple and Lucerne Valleys and San Bernardino County Mountains, but did not refer to strong or gusty winds in other areas.

Appendix B of the Demonstration included Quality Controlled Local Climatological Data for NWS airport sites in Imperial, Riverside, San Diego, and Yuma counties. These data show weather types of haze (HZ) on February 11, 2018 observed at 00:56, 01:56, and 02:56 hours at the El Centro NAF NWS station and at 00:51, 00:53, and 01:35 hours at the Imperial County Airport NWS station.

Appendix C of the Demonstration included National Weather Service Public Zones, the Imperial County web posting of potential elevated PM concentrations, weather story information from the San Diego and Phoenix NWS offices, Air Quality Index information, the Imperial County No Burn Day determination for February 11, 2018, and the public comment notice and associated comments.

In the Demonstration, ICAPCD concluded that "northeasterly and southwesterly winds associated with the February 11, 2018 high wind dust event generated emissions from the natural open desert areas located as far [as] Riverside County, Arizona and during the evening from as far south as Mexico and Imperial County (all part of the Sonoran Desert)."[60]

EPA conclusion regarding CCR criterion

The analyses included in the Demonstration, specifically, the evaluation of several years of PM_{10} monitoring data, numerous time-series graphs and tables of wind speed, wind gusts, wind direction, and hourly PM_{10} concentrations throughout Imperial and Riverside counties, the "ramp-up" analysis, NOAA HYSPLIT back trajectory analysis, NWS station reports of reduced visibility and haze, and the issuance of a NWS wind advisory sufficiently demonstrate that high wind speeds in upwind areas caused emissions from natural desert areas and reasonably controlled local anthropogenic sources to the north of Calexico, which were transported to Calexico in the early morning of February 11, 2018, and caused an exceedance of the 24-hour PM_{10} NAAQS.

The Demonstration additionally states that elevated PM_{10} at Calexico in the evening hours of February 11, 2018, was also due to the high wind dust event. While wind speeds at Mountain Springs Grade, which is west of the Calexico monitor, were elevated coincident with high PM_{10} at Calexico in the evening, this wind measurement site is west of the HYSPLIT trajectories showing transport from Mexico to Calexico. The Demonstration did not provide wind speeds observed at Mexicali airport, which would be more consistent with the source areas identified by the HYSPLIT trajectories. In addition, the NWS advisories and forecasts contain minimal

[59] Demonstration, Appendix A
[60] Demonstration, Section VI

support for high wind affecting the proposed source area at that time. The Calexico monitor was also the only monitor in Imperial County to show significant increases in PM_{10} at the time, compared to earlier in the day when PM_{10} was elevated at sites across Imperial, Riverside, and San Diego counties. $PM_{2.5}$ concentrations at Calexico in the evening hours were also elevated relative to PM_{10} when compared to the earlier hours when windblown dust was affecting the area, suggesting a different source profile for the elevated PM_{10}. Finally, the evening PM concentrations measured on that day were similar to evening-time concentrations measured on other days before the event. It is therefore unclear whether PM_{10} during the evening hours was elevated due to a high wind dust event.

For these reasons, the EPA does not agree that the Demonstration provided sufficient evidence that the elevated hourly concentrations in the evening were caused by a high wind dust event. However, the State has provided sufficient supporting evidence and analyses for EPA to conclude that, given the number of hours affected and the magnitude of the hourly PM_{10} concentrations measured, the high wind dust event affected PM_{10} concentrations in the morning of February 11, 2018 in such a way that the event clearly caused the exceedance measured on February 11, 2018.

Therefore, the Demonstration shows a clear causal relationship between the high wind dust event emissions and the exceedance measured at Calexico.

Table B.4: Documentation of CCR

Exceedance Date	**Demonstration Citation**	**Quality of Evidence**	**Criterion Met?**
February 11, 2018	Section I, II, III, IV, VI Appendices A, B, and C	Sufficient	Yes

4. Natural Event

ICAPCD states in the Demonstration that "the PM_{10} exceedance that occurred at Calexico on February 11, 2018, was caused by the transport of windblown dust into Imperial County by gusty northeasterly and southwesterly winds associated with two shortwave lows' that entered California and moved through the region. At the time of the event, anthropogenic sources, within Imperial County were reasonably controlled with BACM. The event therefore qualifies as a natural event,"[61] and provided evidence that the emissions originated from desert areas located to the north of Calexico in the states of Arizona and Nevada, and in San Bernardino, Imperial, and Riverside counties and that reasonable controls on contributing anthropogenic sources were in place at the time of the event.

Natural event conclusion

The CCR and nRCP analyses demonstrate that event-related emissions of windblown dust were from natural undisturbed lands and that upwind anthropogenic sources were subject to reasonable controls at the time of the event. Therefore, the EPA is satisfied that the high wind dust event met the definition of a natural event.

[61] Demonstration, Section VI

Table B.5: Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
February 11, 2018	Section I, II, III, IV, V, VI	Sufficient	Yes

5. Schedule and Procedural Requirements

In addition to technical Demonstration requirements, 40 CFR §50.14(c) and 40 CFR §51.930 specify schedule and procedural requirements an air agency must follow to request data exclusion. Table B.6 outlines the EPA's evaluation of these requirements.

Table B.6: Schedules and Procedural Criteria

Criterion	Reference	Demonstration Citation	Criterion Met?
Did the agency provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Sufficient	Yes
Did the agency submit an Initial Notification of Potential Exceptional Event and flag the affected data in the EPA's Air Quality System (AQS)?	40 CFR §50.14 (c)(2)(i)	Sufficient	Yes
If applicable, did the initial notification and demonstration submittals meet the deadlines for data influenced by exceptional events for use in initial area designations? Or the deadlines established by the EPA during the Initial Notification of Potential Exceptional Events process, if applicable?	40 CFR §50.14 Table 2 40 CFR §50.14 (c)(2)(i)(B)	Sufficient	Yes
Was the public comment process followed and documented? • Did the agency document that the comment period was open for a minimum of 30 days? • Did the agency submit to the EPA any public comments received? • Did the state address comments disputing or contradicting factual evidence provided in the demonstration?	40 CFR §50.14 (c)(3)(v)	Sufficient	Yes
Has the agency met requirements regarding submission of a mitigation plan, if applicable?	40 CFR §51.930 (b)	NA	NA

6. Conclusion

The EPA has reviewed the documentation provided by CARB and ICAPCD to support the conclusion that a high wind dust event caused an exceedance of the 24-hour PM_{10} NAAQS at Calexico on February 11, 2018. The EPA has determined that the flagged exceedance at this monitoring station on this day meets the definition of an exceptional event: the high wind dust event affected air quality in such a way that there exists a clear causal relationship between the event and the monitored exceedance, was not reasonably preventable or controllable, and meets the definition of a natural event. The EPA has also determined that CARB and ICAPCD have satisfied the schedule and procedural requirements for data exclusion.

C. Event Day: February 19, 2018

Table C.1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m³)
February 19, 2018	Calexico	06-025-0005-3	182
February 19, 2018	Brawley	06-025-0007-3	224
February 19, 2018	Westmorland	06-025-4003-3	193
February 19, 2018	Niland	06-025-4004-3	230

1. Narrative Conceptual Model

Sections I and II of the Demonstration provided a narrative conceptual model of the event and included characteristics of Imperial County, such as general description of the geography, topography, and meteorology, and a description and map of the ambient air quality monitoring network and meteorological sites (see Figure C.1).

Figure C.1: Monitoring Sites in Imperial County[62]

[62] Demonstration, Section I

Sections I and II of the Demonstration further described the event-specific characteristics and included ICAPCD's conclusion that the exceedances measured at the Calexico, Brawley, Westmorland, and Niland monitoring stations (Calexico, Brawley, Westmorland, and Niland) was caused by "a forecasted cold, low-pressure trough that moved south into the Pacific Northwest on Sunday, February 18, 2018 then tracked across the Great Basin on Monday, February 19, 2018 brin[g]ing [sic] gusty westerly winds to southeastern California and western Arizona. The strong gusty westerly winds ahead of the system generated emissions from within the open mountain ranges and surround[ing] open natural deserts within San Diego and Imperial Counties,"[63] and that the exceedances qualify as an exceptional event under the EER. ICAPCD summarized the event and included a table of hourly PM_{10} concentrations measured on February 18-20, 2018 at monitoring sites in Riverside, Imperial and Yuma counties, a 72-hour time-series of PM_{10} concentration profiles for monitoring sites in the area, two 72-hour time series of wind speed and wind gust measurements from select meteorological sites in the area, and 12:00 AM PST 10-hour and 10:00 AM PST 24-hour February 19, 2018 NOAA Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) back trajectories from monitoring sites in the area.

Based on the information described above, ICAPCD's Demonstration satisfies the narrative conceptual model criterion of the EER.

Table C.2: Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
February 19, 2018	Sections I and II	Sufficient	Yes

2. Not Reasonably Controllable or Preventable (nRCP)

High wind threshold

ICAPCD provided documentation showing that sustained wind speeds associated with the event were above the EPA's 25 mph high wind threshold on February 19, 2018. For example, maximum sustained wind speeds of 37 mph with gusts of 46 mph were measured at the El Centro NAF National Weather Service (NWS) station, and maximum sustained wind speeds of 33 mph with gusts of 44 mph were measured at the Imperial County Airport NWS station.

Identification of contributing sources

ICAPCD analysis shows satellite imagery and HYSPLIT back trajectories originating from the five PM_{10} monitoring sites in Imperial County as well as sites in Riverside and Yuma Counties.[64] The Demonstration states that "[a]s strong gusty westerly winds blew over open natural mountains and desert areas west of Imperial County, fugitive windblown dust affected all air quality monitors throughout the southeastern region, except Palm Springs."[65]

[63] Demonstration, Section II
[64] Demonstration, Section II
[65] Demonstration, Section II

Identification of reasonable controls

In Section V, ICAPCD provided detailed information on the current set of required controls in the Imperial County PM_{10} nonattainment area, including information on nonattainment status and a description and timeline of implementation of Regulation VIII, which includes Rules 800, 801, 802, 803, 804, 805, and 806. Regulation VIII was adopted by ICAPCD on October 16, 2012, and Rules 800, 804, 805 and 806 were approved by the EPA as Best Available Control Measure (BACM) level rules on April 22, 2013, with an effective date of May 22, 2013. Regulation VIII addresses the desert open areas managed by the Bureau of Land Management (BLM), U.S. Border Patrol, the California Department of Parks, and construction, open areas, track out, paved and unpaved roads, and agricultural operations.[66] ICAPCD also notes that "[b]oth permitted and non-permitted sources are required to comply with Regulation VIII requirements that address fugitive dust emissions."[67]

As identified above, the Demonstration states that the potential source area includes "open natural mountains and desert areas west of Imperial County."[68] This statement is supported by the HYSPLIT back trajectory analysis, which shows the trajectory passing through the eastern portion of San Diego County and northern Mexico before continuing into Imperial County.[69] Based on a review of satellite imagery, this area appears to be predominately natural desert that transitions to mountainous terrain over 3000 ft in elevation. San Diego County is currently a PM_{10} attainment area with no federally required PM_{10} SIP control measures. San Diego County does have local control measures that reduce PM (including PM_{10}) from sources such as: Rule 50 Visible Emissions, Rule 51 Nuisance, Rule 52 Particulate Matter, Rule 54 Dust and Fumes, Rule 55 Fugitive Dust Control, and Rule 101 Burning Control. An assessment of reasonable controls in northern Mexico is not required, as sources in Mexico are not within ICAPCD's or CARB's jurisdictional boundaries.[70]

Evidence of effective implementation and enforcement

ICAPCD provided information on source-permitted inspections and public complaints that occurred during the event and stated in the Demonstration that it evaluated inspection reports, air quality complaints, compliance reports, and other documentation and found no evidence of unusual anthropogenic-based PM_{10} emissions. ICAPCD also stated that "[t]here were no complaints filed on February 19, 2018, officially declared as [a] No Burn Day, related to agricultural burning, waste burning or dust."[71]

[66] Demonstration, Section V
[67] Demonstration, Section V
[68] Demonstration, Section II
[69] Demonstration, Section II
[70] 40 CFR part 50.14 (b)(8)(vii)
[71] Demonstration, Section V

Not reasonably preventable

While high wind dust events do not require a case-specific justification that the event was also not reasonably preventable,[72] ICAPCD's Demonstration discusses this criterion and states that "[t]he PM_{10} exceedance[s] measured at the Brawley, Calexico, Niland, and Westmorland monitors were caused by naturally occurring strong gusty westerly winds that transported windblown dust into Imperial County and other parts of southern California from areas located within the Sonoran Desert regions to the west of Imperial County"[73] and, therefore, a specific showing of the not reasonably preventable criterion is not required.[74]

EPA conclusion regarding nRCP criterion

Generally, State Implementation Plan (SIP) rules must be enforceable and must not relax existing requirements (see CAA sections 110(l) and 193). Rules implementing BACM and Best Available Control Technologies (BACT) are required in serious PM_{10} nonattainment areas (see CAA sections 189(a)(1) and 189(b)(1)). ICAPCD regulates a PM_{10} nonattainment area classified as serious (see 40 CFR part 81), so the applicable SIP should contain rules that implement BACM on contributing anthropogenic sources of windblown dust.

On July 8, 2010,[75] the EPA approved versions of the rules that comprise Regulation VIII, but required revisions to Rules 800, 804, 805, and 806. On April 22, 2013, the EPA fully approved these rule revisions into the California SIP. [76] The final rule also stated that the "EPA's preliminary view is that the Regulation VIII rules as revised in October 2012 constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the exceptional events rule, including reasonable and appropriate control measures on significant contributing anthropogenic sources."[77] The most recent BACM determinations for the rules are within five years of the date of the event, and the EPA considers the controls to constitute reasonable controls for this event.

The EPA also considers the control measures in place in San Diego County to be reasonable controls for this event based on San Diego's PM_{10} attainment status and the back-trajectory analysis showing the trajectory passing through a portion of San Diego County that appears to be predominately natural desert and mountainous areas with few sources of anthropogenic windblown dust. Therefore, the EPA is satisfied that the nRCP criterion of the EER is met.

Table C.3: Documentation of nRCP

Exceedance Date	**Demonstration Citation**	**Quality of Evidence**	**Criterion Met?**
February 19, 2018	Section II, V, and VI	Sufficient	Yes

[72] 40 CFR part 50.14 (b)(5)(iv)
[73] Demonstration, Section VI
[74] Demonstration, Section VI
[75] 75 FR 39366
[76] 78 FR 23677
[77] 78 FR 23682

3. Clear Causal Relationship (CCR)

Comparison with historical concentrations

In Section IV of the Demonstration, ICAPCD included a comparison with historical concentrations, as required by 40 CFR §50.14(c)(3)(iv)(C). In the Demonstration, ICAPCD compared the event-related PM_{10} concentrations with concentrations from 2010-2018 by highlighting the event day compared to routine data throughout the year and the season in which the exceedances occurred (January – March). The analysis also showed that the 24-hour PM_{10} concentration on the exceedance day was "outside the normal historical concentration levels when comparing to event and non-event days."[78]

Evidence of transport of high wind dust emissions from the source area to the monitor

In addition to analyses presented in Sections I and II, Section III of the Demonstration included: a Terra and Aqua Moderate Resolution Imaging Spectroradiometer (MODIS) satellite imagery at 2018 10:30 PM PST and 13:30 PST, respectively; a "ramp-up" analysis of the event data that showed satellite imagery, general wind speed, gust, and direction in the upwind areas, locations of NWS advisories, and hourly PM_{10} concentrations measured in Imperial County; a 72-hour time series of PM_{10} concentrations measured at monitoring sites in Imperial County and visibility from regional NWS stations; a table of wind speed, gust, and direction measurements at selected meteorological sites in the area and PM_{10} concentrations from monitoring sites in Imperial County; and Air Quality Index (AQI) information.

Appendix A of the Demonstration included NWS urgent weather messages and advisories. Consistent with the discussion in Sections I, II, and III of the Demonstration, NWS Offices in San Diego, CA and Phoenix, AZ issued a series of weather advisories for Western Arizona and Southeast California. NWS San Diego, CA issued a wind advisory for areas including the San Diego County Deserts at 5:32 PM PST on February 17, 2018, which was in effect from 2:00 PM PST on February 18, 2018 to 6:00 PM PST on February 19, 2018 and states that "[b]lowing dust and sand may reduce visibility to near-zero in a few locations."[79] NWS Phoenix, AZ issued a wind advisory for Imperial County Southwest, and Imperial County West at 2:45 AM MST on February 18, 2018, which was in effect from 2:00 PM PST February 18, 2018 to 8:00 PM PST on February 19, 2018 and states that "[a]reas of blowing dusts may also lead to sharply reduced visibilities."[80]

Appendix B of the Demonstration included Quality Controlled Local Climatological Data for NWS airport sites in Imperial, Riverside, San Diego, and Yuma counties. These data show weather types of haze (HZ) observed at time 5:51, 5:53, 6:53, 10:51, and 10:53 hours at the Imperial County Airport NWS station on February 19, 2018.

Appendix C of the Demonstration included weather story information from the San Diego and Phoenix NWS offices, NOAA Smoke/Dust Satellite Narrative, AQI information, the Imperial

[78] Demonstration, Section IV
[79] Demonstration, Appendix A
[80] Demonstration, Appendix A

County No Burn Day determination for February 19, 2018, and the public comment notice (affidavit).

In the Demonstration, ICAPCD concluded that "high gusty westerly winds transported fugitive emissions from open natural mountain and desert areas, located within San Diego County and Imperial County (all part of the Sonoran Desert)."[81]

EPA conclusion regarding CCR criterion

The analyses included in the Demonstration, specifically, the evaluation of several years of PM_{10} monitoring data, numerous time-series graphs and tables of wind speed, wind gusts, wind direction, and hourly PM_{10} concentrations throughout Imperial County, the "ramp-up" analysis, NOAA HYSPLIT back trajectory analysis, NWS station reports of haze, and the issuance of a NWS wind advisory sufficiently demonstrate that high wind speeds in upwind areas caused emissions from open natural mountain and desert areas, located within San Diego County and Imperial County (all part of the Sonoran Desert), which were transported to Calexico, Brawley, Westmorland, and Niland and caused an exceedance of the 24-hour PM_{10} NAAQS. Therefore, the Demonstration shows a clear causal relationship between the high wind dust event emissions and the exceedances measured at Calexico, Brawley, Westmorland, and Niland.

Table C.4: Documentation of CCR

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
February 19, 2018	Section I, II, III, IV, VI Appendices A, B, and C	Sufficient	Yes

4. Natural Event

ICAPCD stated in the Demonstration that "the PM_{10} exceedance that occurred at the Brawley, Calexico, Niland, and Westmorland monitors on February 19, 2018, was caused by the transport of windblown dust into Imperial County by strong westerly winds associated with a large low-pressure system that passed through the region… [and] [a]t the time of the event, anthropogenic sources, within Imperial County were reasonably controlled with BACM… [and] [t]he event therefore qualifies as a natural event,"[82] and provided evidence that the emissions originated from open natural mountain and desert areas, located within San Diego County and Imperial County (all part of the Sonoran Desert), and that reasonable controls on contributing anthropogenic sources were in place at the time of the event.

Natural event conclusion

The CCR and nRCP analyses demonstrate that event-related emissions of windblown dust were from natural undisturbed lands and that upwind anthropogenic sources were subject to

[81] Demonstration, Section VI
[82] Demonstration, Section VI

reasonable controls at the time of the event. Therefore, the EPA is satisfied that the high wind dust event met the definition of a natural event.

Table C.5: Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
February 19, 2018	Section I, II, III, IV, V, VI	Sufficient	Yes

5. Schedule and Procedural Requirements

In addition to technical Demonstration requirements, 40 CFR §50.14(c) and 40 CFR §51.930 specify schedule and procedural requirements an air agency must follow to request data exclusion. Table C.6 outlines the EPA's evaluation of these requirements.

Table C.6: Schedules and Procedural Criteria

Criterion	Reference	Demonstration Citation	Criterion Met?
Did the agency provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Sufficient	Yes
Did the agency submit an Initial Notification of Potential Exceptional Event and flag the affected data in the EPA's Air Quality System (AQS)?	40 CFR §50.14 (c)(2)(i)	Sufficient	Yes
If applicable, did the initial notification and demonstration submittals meet the deadlines for data influenced by exceptional events for use in initial area designations? Or the deadlines established by the EPA during the Initial Notification of Potential Exceptional Events process, if applicable?	40 CFR §50.14 Table 2 40 CFR §50.14 (c)(2)(i)(B)	Sufficient	Yes
Was the public comment process followed and documented? • Did the agency document that the comment period was open for a minimum of 30 days? • Did the agency submit to the EPA any public comments received? • Did the state address comments disputing or contradicting factual evidence provided in the demonstration?	40 CFR §50.14 (c)(3)(v)	Sufficient	Yes
Has the agency met requirements regarding submission of a mitigation plan, if applicable?	40 CFR §51.930 (b)	NA	NA

6. Conclusion

The EPA has reviewed the documentation provided by CARB and ICAPCD to support the conclusion that a high wind dust event caused exceedances of the 24-hour PM_{10} NAAQS at Calexico, Brawley, Westmorland, and Niland on February 19, 2018. The EPA has determined that the flagged exceedances at these monitoring stations on these days meet the definition of an exceptional event: the high wind dust event affected air quality in such a way that there exists a clear causal relationship between the event and the monitored exceedances, was not reasonably preventable or controllable, and meets the definition of a natural event. The EPA has also determined that CARB and ICAPCD have satisfied the schedule and procedural requirements for data exclusion.

D. Event Day: April 11, 2018 and April 12, 2018

Table D.1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m³)
April 11, 2018	Niland	06-025-4004-3	191
April 12, 2018	Calexico	06-025-0005-3	182
April 12, 2018	Brawley	06-025-0007-3	183
April 12, 2018	El Centro	06-025-1003-4	159

1. Narrative Conceptual Model

Sections I and II of the Demonstration provided a narrative conceptual model of the event and included characteristics of Imperial County, such as general description of the geography, topography, and meteorology, and a description and map of the ambient air quality monitoring network and meteorological sites (see Figure D.1).

Figure D.1: Monitoring Sites in Imperial County[83]

[83] Demonstration, Section I

Sections I and II of the Demonstration further described the event-specific characteristics and included ICAPCD's conclusion that the exceedances measured at the Niland, Calexico, Brawley, and El Centro monitoring stations (Niland, Calexico, Brawley, and El Centro) were caused by "a low-pressure system [that] moved inland from the Pacific coast over California and increased the surface pressure gradients which generated strong gusty westerly winds across the Desert Southwest…[and] [t]he strong gusty westerly winds … generated emissions from within the open mountain ranges and surrounding open natural deserts within San Diego and Imperial Counties,"[84] and that the exceedances qualify as an exceptional event under the EER. ICAPCD summarized the event and included a table of hourly PM_{10} concentrations measured on April 10-13, 2018, at monitoring sites in Riverside, Imperial and Yuma counties, a 96-hour time-series of PM_{10} concentration profiles for monitoring sites in the area, two 96-hour time series of wind speed and wind gust measurements from select meteorological sites in the area, and a 7:00 AM, 3:00 PM, and 7:00 PM PST April 11, 2018 12-hour NOAA Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) back trajectories from monitoring sites in the area, and 12:00 AM and 7:00 AM PST April 12, 2018 12-hour HYSPLIT back trajectories from monitoring sites in the area.

Based on the information described above, ICAPCD's Demonstration satisfies the narrative conceptual model criterion of the EER.

Table D.2: Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 11-12, 2018	Sections I and II	Sufficient	Yes

2. Not Reasonably Controllable or Preventable (nRCP)

High wind threshold

ICAPCD provided documentation showing that sustained wind speeds associated with the event were above the EPA's 25 mph high wind threshold on April 11, 2018 and April 12, 2018. For example, maximum sustained wind speeds of 41 mph with gusts of 49 mph were measured at the El Centro NAF National Weather Service (NWS) station on April 11, 2018. Maximum sustained wind speeds of 32 mph with gusts of 40 mph were measured at the El Centro NAF NWS station on April 12, 2018.

Identification of contributing sources

ICAPCD analysis shows satellite imagery and HYSPLIT back trajectories originating from the five PM_{10} monitoring sites in Imperial County and other monitoring sites in Riverside and Yuma counties.[85] The Demonstration states that "[a]s strong gusty westerly winds blew over open natural mountains and desert areas west of Imperial County, fugitive windblown dust affected air quality monitors within Imperial County."[86]

[84] Demonstration, Section II
[85] Demonstration, Section II
[86] Demonstration, Section II

Identification of reasonable controls

In Section V, ICAPCD provided detailed information on the current set of required controls in the Imperial County PM_{10} nonattainment area, including information on nonattainment status and a description and timeline of implementation of Regulation VIII, which includes Rules 800, 801, 802, 803, 804, 805, and 806. Regulation VIII was adopted by ICAPCD on October 16, 2012, and Rules 800, 804, 805 and 806 were approved by the EPA as Best Available Control Measure (BACM) level rules on April 22, 2013, with an effective date of May 22, 2013. Regulation VIII addresses the desert open areas managed by the Bureau of Land Management (BLM), U.S. Border Patrol, the California Department of Parks, and construction, open areas, track out, paved and unpaved roads, and agricultural operations.[87] ICAPCD also notes that "[b]oth permitted and non-permitted sources are required to comply with Regulation VIII requirements that address fugitive dust emissions."[88]

As identified above, the Demonstration states that the potential source area includes "open natural mountains and desert areas west of Imperial County."[89] This statement is supported by the HYSPLIT back trajectory analysis, which shows the trajectories on April 11, 2018, and April 12, 2018, passing through San Diego County before continuing into Imperial County.[90] Based on a review of satellite imagery, this area appears to predominately natural desert that transitions to mountainous terrain over 3000 ft in elevation. San Diego County is currently a PM_{10} attainment area with no federally required PM_{10} SIP control measures. San Diego County does have local control measures that reduce PM (including PM_{10}) from sources such as: Rule 50 Visible Emissions, Rule 51 Nuisance, Rule 52 Particulate Matter, Rule 54 Dust and Fumes, Rule 55 Fugitive Dust Control, and Rule 101 Burning Control.

Evidence of effective implementation and enforcement

ICAPCD provided information on source-permitted inspections and public complaints that occurred during the event and stated in the Demonstration that it evaluated inspection reports, air quality complaints, compliance reports, and other documentation and found no evidence of unusual anthropogenic-based PM_{10} emissions. ICAPCD also stated that "[t]here was no complaint filed on April 11, 2018 and April 12, 2018, officially declared as No Burn Days, related to agricultural burning, waste burning or dust. There was, however, a complaint filed by a resident of the City of El Centro regarding smoke and noxious odors. Upon investigation, by qualified personnel, no evidence of any smoke, illegal burning or noxious odors were found."[91]

Not reasonably preventable

While high wind dust events do not require a case-specific justification that the event was also not reasonably preventable,[92] ICAPCD's Demonstration discusses this criterion and states that

[87] Demonstration, Section V
[88] Demonstration, Section V
[89] Demonstration, Section II
[90] Demonstration, Section II
[91] Demonstration, Section V
[92] 40 CFR part 50.14 (b)(5)(iv)

"[t]he PM_{10} exceedances measured at the Brawley, Calexico, El Centro, and Niland monitors were caused by naturally occurring gusty westerly winds that transported windblown dust into Imperial County and other parts of southern California from areas located within the Sonoran Desert regions to the west and southwest of Imperial County" and, therefore, a specific showing of the not reasonably preventable criterion is not required.[93]

EPA conclusion regarding nRCP criterion

Generally, State Implementation Plan (SIP) rules must be enforceable and must not relax existing requirements (see CAA sections 110(l) and 193). Rules implementing BACM and Best Available Control Technologies (BACT) are required in serious PM_{10} nonattainment areas (see CAA sections 189(a)(1) and 189(b)(1)). ICAPCD regulates a PM_{10} nonattainment area classified as serious (see 40 CFR part 81), so the applicable SIP should contain rules that implement BACM on contributing anthropogenic sources of windblown dust.

On July 8, 2010,[94] the EPA approved versions of the rules that comprise Regulation VIII, but required revisions to Rules 800, 804, 805, and 806. On April 22, 2013, the EPA fully approved these rule revisions into the California SIP. [95] The final rule also stated that the "EPA's preliminary view is that the Regulation VIII rules as revised in October 2012 constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the exceptional events rule, including reasonable and appropriate control measures on significant contributing anthropogenic sources."[96] The most recent BACM determinations for the rules are within five years of the date of the event, and the EPA considers the controls to constitute reasonable controls for this event.

The EPA also considers the control measures in place in San Diego County to be reasonable controls for this event based on San Diego's PM_{10} attainment status and the back-trajectory analysis showing the trajectory passing through a portion of San Diego County that appears to be predominately natural desert and mountainous areas with few sources of anthropogenic windblown dust. Therefore, the EPA is satisfied that the nRCP criterion of the EER is met.

Table D.3: Documentation of nRCP

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 11-12, 2018	Section II, V, and VI	Sufficient	Yes

3. Clear Causal Relationship (CCR)

Comparison with historical concentrations

In Section IV of the Demonstration, ICAPCD included a comparison with historical concentrations, as required by 40 CFR §50.14(c)(3)(iv)(C). In the Demonstration, ICAPCD

[93] Demonstration, Section VI
[94] 75 FR 39366
[95] 78 FR 23677
[96] 78 FR 23682

compared the event-related PM_{10} concentrations with concentrations from 2010-2018 by highlighting the event days compared to routine data throughout the year and the season in which the exceedances occurred (April – June). The analysis also showed that the 24-hour PM_{10} concentration on the exceedance days were "clearly outside the normal concentration levels when comparing to similar event days and non-event days."[97]

Evidence of transport of high wind dust emissions from the source area to the monitor

In addition to analyses presented in Sections I and II, Section III of the Demonstration included: "ramp-up" analyses of the data for both event days that showed satellite imagery, general wind speed, gust, and direction in the upwind areas, locations of NWS advisories and warnings, and hourly PM_{10} concentrations measured at Brawley, Calexico, El Centro and Niland; a 96-hour time series of PM_{10} concentrations measured at monitoring sites in Imperial County and visibility from regional NWS stations; tables of wind speed, gust, and direction measurements at selected meteorological sites in the area and PM_{10} concentrations from monitoring sites in Imperial County; and Air Quality Index (AQI) information.

Appendix A of the Demonstration included NWS urgent weather messages and advisories. Consistent with the discussion in Sections I, II, and III of the Demonstration, NWS Phoenix issued a wind advisory for Southwest Imperial County, the Salton Sea, West Imperial County, and the Imperial Valley, at 2:44 AM MST on April 11, 2018, which was in effect from 4:00 PM PDT on April 11, 2018 to 8:00 PM PDT on April 12, 2018 and states that "[w]est winds of 20 to 30 mph gusting to 40 to 50 mph [will cause] [d]ifficult driving conditions, especially on roads closer to the mountains and any north-south oriented roads. Some areas of blowing dust may develop, limiting visibility."[98] NWS San Diego issued a high wind warning for areas including the San Diego County Mountains at 2:08 PM PDT on April 10, 2018, which was in effect from 1:00 PM PDT on April 10, 2018, to 10:00 PM PDT on April 11, 2018, and states that there are "west winds 25 to 35 mph with gusts up to 60 mph" and "areas of blowing dust and sand will reduce visibility at times."[99]

Appendix B of the Demonstration included Quality Controlled Local Climatological Data for NWS airport sites in Imperial, Riverside, and San Diego counties. These data show weather types of dust (DU) events observed at 18:56 on April 11, 2018, and from 5:56 until 12:56 hours, and at 16:56 hours on April 12, 2018, at the El Centro NAF NWS station and haze (HZ) observed at 18:37, 18:53, and 23:53 hours on April 11, 2018 and observed at 10:04, 10:53, and 16:53 hours on April 12, 2018, at the Imperial County Airport station.

Appendix C of the Demonstration included Imperial County web posting of potential elevated PM concentrations, weather story information from the San Diego and Phoenix NWS offices, NOAA smoke text product, AQI information, the Imperial County No Burn Day determination for April 11, 2018, and April 12, 2018, documentation of an air pollution complaint from a member of the public, certification ICAPCD investigated the complaint, and the public comment notice (affidavit).

[97] Demonstration, Section IV
[98] Demonstration, Appendix A
[99] Demonstration, Appendix A

In the Demonstration, ICAPCD concluded that "high gusty westerly winds transported fugitive emissions from open natural Mountain and desert areas, located within the San Diego County and Imperial County (all part of the Sonoran Desert)."[100]

EPA conclusion regarding CCR criterion

The analyses included in the Demonstration, specifically, the evaluation of several years of PM_{10} monitoring data, numerous time-series graphs and tables of wind speed, wind gusts, wind direction, and hourly PM_{10} concentrations throughout Imperial County, the "ramp-up" analysis, NOAA HYSPLIT back trajectory analysis, NWS station reports of reduced visibility and haze, and the issuance of NWS wind advisories and a high wind warning sufficiently demonstrate that high wind speeds in upwind areas caused emissions from open natural mountains and desert areas west of Niland, Calexico, Brawley, and El Centro, which were transported to Niland, Calexico, Brawley, and El Centro and caused an exceedance of the 24-hour PM_{10} NAAQS. Therefore, the Demonstration shows a clear causal relationship between the high wind dust event emissions and the exceedances measured at Niland, Calexico, Brawley, and El Centro.

Table D.4: Documentation of CCR

Exceedance Date	**Demonstration Citation**	**Quality of Evidence**	**Criterion Met?**
April 11-12, 2018	Section I, II, III, IV, VI Appendices A, B, and C	Sufficient	Yes

4. Natural Event

ICAPCD stated in the Demonstration that "the PM_{10} exceedance[s] that occurred at the Brawley, Calexico, El Centro, and Niland monitors on April 11, 2018 and April 12, 2018, were caused by the transport of windblown dust into Imperial County by strong gusty westerly winds associated with a Pacific low-pressure system that passed through the region…[and][a]t the time of the event, anthropogenic sources, within Imperial County were reasonably controlled with BACM…[and][t]he event therefore qualifies as a natural event,"[101] and provided evidence that the emissions originated from open natural mountains and desert areas west of Niland, Calexico, Brawley, and El Centro in San Diego and Imperial counties and that reasonable controls on contributing anthropogenic sources were in place at the time of the event.

Natural event conclusion

The CCR and nRCP analyses demonstrate that event-related emissions of windblown dust were from natural undisturbed lands and that upwind anthropogenic sources were subject to reasonable controls at the time of the event. Therefore, the EPA is satisfied that the high wind dust event met the definition of a natural event.

[100] Demonstration, Section VI
[101] Demonstration, Section VI

Table D.5: Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 11-12, 2018	Section I, II, III, IV, V, VI	Sufficient	Yes

5. Schedule and Procedural Requirements

In addition to technical Demonstration requirements, 40 CFR §50.14(c) and 40 CFR §51.930 specify schedule and procedural requirements an air agency must follow to request data exclusion. Table D.6 outlines the EPA's evaluation of these requirements.

Table D.6: Schedules and Procedural Criteria

Criterion	Reference	Demonstration Citation	Criterion Met?
Did the agency provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Sufficient	Yes
Did the agency submit an Initial Notification of Potential Exceptional Event and flag the affected data in the EPA's Air Quality System (AQS)?	40 CFR §50.14 (c)(2)(i)	Sufficient	Yes
If applicable, did the initial notification and demonstration submittals meet the deadlines for data influenced by exceptional events for use in initial area designations? Or the deadlines established by the EPA during the Initial Notification of Potential Exceptional Events process, if applicable?	40 CFR §50.14 Table 2 40 CFR §50.14 (c)(2)(i)(B)	Sufficient	Yes
Was the public comment process followed and documented? • Did the agency document that the comment period was open for a minimum of 30 days? • Did the agency submit to the EPA any public comments received? • Did the state address comments disputing or contradicting factual evidence provided in the demonstration?	40 CFR §50.14 (c)(3)(v)	Sufficient	Yes
Has the agency met requirements regarding submission of a mitigation plan, if applicable?	40 CFR §51.930 (b)	NA	NA

6. Conclusion

The EPA has reviewed the documentation provided by CARB and ICAPCD to support the conclusion that a high wind dust event caused exceedances of the 24-hour PM_{10} NAAQS at Niland on April 11, 2018, and Calexico, Brawley, and El Centro on April 12, 2018. The EPA has determined that the flagged exceedances at these monitoring stations on these days meet the definition of an exceptional event: the high wind dust event affected air quality in such a way that there exists a clear causal relationship between the event and the monitored exceedances, was not reasonably preventable or controllable, and meets the definition of a natural event. The EPA has also determined that CARB and ICAPCD have satisfied the schedule and procedural requirements for data exclusion.

E. Event Day: April 16, 2018

Table E.1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m³)
April 16, 2018	Brawley	06-025-0007-3	407
April 16, 2018	Calexico	06-025-0005-3	407
April 16, 2018	El Centro	06-025-1003-4	173
April 16, 2018	Niland	06-025-4004-3	222
April 16, 2018	Westmorland	06-025-4003-3	351

1. Narrative Conceptual Model

Sections I and II of the Demonstration provided a narrative conceptual model of the event and included characteristics of Imperial County, such as general description of the geography, topography, and meteorology, and a description and map of the ambient air quality monitoring network and meteorological sites (see Figure E.1).

Figure E.1: Monitoring Sites in Imperial County[102]

[102] Demonstration, Section I

Sections I and II of the Demonstration further described the event-specific characteristics and included ICAPCD's conclusion that the exceedances measured at the Brawley, Calexico, El Centro, Niland and Westmorland monitoring stations (Brawley, Calexico, El Centro, Niland and Westmorland) were caused by "a forecasted low pressure system and associated cold front moved inland from the Pacific coast over California [brought] gusty westerly winds across California [and] [t]hese strong gusty westerly winds associated with the system generated emissions from within the open mountain ranges and surrounding natural deserts within San Diego and Imperial Counties,"[103] and that the exceedances qualify for an exceptional event under the EER. ICAPCD summarized the event and included a table of hourly PM_{10} concentrations measured on April 15-17, 2018, at monitoring sites in Riverside, Imperial and Yuma counties, a 72-hour time-series of PM_{10} concentration profiles for monitoring sites in the area, two 72-hour time series of wind speed and wind gust measurements from select meteorological sites in the area, and April 16, 2018, 12:00 PM PST and 7:00 PM PST 12-hour NOAA Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) back trajectories from monitoring sites in the area.

Based on the information described above, ICAPCD's Demonstration satisfies the narrative conceptual model criterion of the EER.

Table E.2: Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 16, 2018	Sections I and II	Sufficient	Yes

2. Not Reasonably Controllable or Preventable (nRCP)

High wind threshold

ICAPCD provided documentation showing that sustained wind speeds associated with the event were above the EPA's 25 mph high wind threshold on April 16, 2018. For example, maximum sustained wind speeds of 39 mph with gusts of 52 mph were measured at the Imperial County National Weather Service (NWS) station and maximum sustained wind speeds of 40 mph with gusts of 48 mph were measured at the El Centro NAF NWS station.

Identification of contributing sources

ICAPCD analysis shows satellite imagery and HYSPLIT back trajectories originating from the five PM_{10} monitoring sites in Imperial County.[104] The Demonstration states that "strong gusty westerly winds blew through over open natural mountain and desert areas west of Imperial County."[105]

[103] Demonstration, Section II
[104] Demonstration, Section II
[105] Demonstration, Section II

Identification of reasonable controls

In Section V, ICAPCD provided detailed information on the current set of required controls in the Imperial County PM_{10} nonattainment area, including information on nonattainment status and a description and timeline of implementation of Regulation VIII, which includes Rules 800, 801, 802, 803, 804, 805, and 806. Regulation VIII was adopted by ICAPCD on October 16, 2012, and Rules 800, 804, 805 and 806 were approved by the EPA as Best Available Control Measure (BACM) level rules on April 22, 2013, with an effective date of May 22, 2013. Regulation VIII addresses the desert open areas managed by the Bureau of Land Management (BLM), U.S. Border Patrol, the California Department of Parks, and construction, open areas, track out, paved and unpaved roads, and agricultural operations.[106] ICAPCD also notes that "[b]oth permitted and non-permitted sources are required to comply with Regulation VIII requirements that address fugitive dust emissions."[107]

As identified above, the Demonstration states that the potential source area includes "open natural mountains and desert areas west of Imperial County."[108] This statement is supported by the HYSPLIT back trajectory analysis, which shows the trajectories passing through San Diego County before continuing into Imperial County.[109] Based on a review of satellite imagery, this area appears to predominately natural desert that transitions to mountainous terrain over 3000 ft in elevation. San Diego County is currently a PM_{10} attainment area with no federally required PM_{10} SIP control measures. San Diego County does have local control measures that reduce PM (including PM_{10}) from sources such as: Rule 50 Visible Emissions, Rule 51 Nuisance, Rule 52 Particulate Matter, Rule 54 Dust and Fumes, Rule 55 Fugitive Dust Control, and Rule 101 Burning Control. While some trajectories also pass through Mexico, an assessment of reasonable controls in Mexico is not required, as sources in Mexico are not within ICAPCD's or CARB's jurisdictional boundaries.[110]

Evidence of effective implementation and enforcement

ICAPCD provided information on source-permitted inspections and public complaints that occurred during the event and stated in the Demonstration that it evaluated inspection reports, air quality complaints, compliance reports, and other documentation and found no evidence of unusual anthropogenic-based PM_{10} emissions. ICAPCD also stated that it received one complaint regarding dust on April 16, 2018. The incident was located in Bard, California, downwind from the exceeding monitors. Therefore, ICAPCD concluded that the incident had no effect on the monitors.

Not reasonably preventable

While high wind dust events do not require a case-specific justification that the event was also not reasonably preventable,[111] ICAPCD's Demonstration discusses this criterion and states that

[106] Demonstration, Section V
[107] Demonstration, Section V
[108] Demonstration, Section II
[109] Demonstration, Section II
[110] 40 CFR part 50.14 (b)(8)(vii)
[111] 40 CFR part 50.14 (b)(5)(iv)

"[t]he PM_{10} exceedances measured at the Brawley, Calexico, El Centro, Niland and Westmorland monitors were caused by naturally occuring strong gusty westerly winds that transported windblown dust into Imperial County and other parts of Southern California from areas located within the Sonoran Desert regions to the west of Imperial County" and, therefore, a specific showing of the not reasonably preventable criterion is not required.[112]

EPA conclusion regarding nRCP criterion

Generally, State Implementation Plan (SIP) rules must be enforceable and must not relax existing requirements (see CAA sections 110(l) and 193). Rules implementing BACM and Best Available Control Technologies (BACT) are required in serious PM_{10} nonattainment areas (see CAA sections 189(a)(1) and 189(b)(1)). ICAPCD regulates a PM_{10} nonattainment area classified as serious (see 40 CFR part 81), so the applicable SIP should contain rules that implement BACM on contributing anthropogenic sources of windblown dust.

On July 8, 2010,[113] the EPA approved versions of the rules that comprise Regulation VIII, but required revisions to Rules 800, 804, 805, and 806. On April 22, 2013, the EPA fully approved these rule revisions into the California SIP. [114] The final rule also stated that the "EPA's preliminary view is that the Regulation VIII rules as revised in October 2012 constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the exceptional events rule, including reasonable and appropriate control measures on significant contributing anthropogenic sources."[115] The most recent BACM determinations for the rules are within five years of the date of the event, and the EPA considers the controls to constitute reasonable controls for this event.

The EPA also considers the control measures in place in San Diego County to be reasonable controls for this event based on San Diego's PM_{10} attainment status and the back-trajectory analyses showing the trajectories passing through portions of San Diego County which appear to be predominately natural desert and mountainous areas with few sources of anthropogenic windblown dust. Therefore, the EPA is satisfied that the nRCP criterion of the EER is met.

Table E.3: Documentation of nRCP

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 16, 2018	Section II, V, and VI	Sufficient	Yes

3. Clear Causal Relationship (CCR)

Comparison with historical concentrations

In Section IV of the Demonstration, ICAPCD included a comparison with historical concentrations, as required by 40 CFR §50.14(c)(3)(iv)(C). In the Demonstration, ICAPCD

[112] Demonstration, Section VI
[113] 75 FR 39366
[114] 78 FR 23677
[115] 78 FR 23682

compared the event-related PM_{10} concentrations with concentrations from 2010-2018 by highlighting the event day compared to routine data throughout the year and the season in which the exceedances occurred (April – June). The analysis also showed that the 24-hour PM_{10} concentrations on the exceedance day or were "outside the normal concentration levels when comparing to non-event days and event days."[116]

Evidence of transport of high wind dust emissions from the source area to the monitor

In addition to analyses presented in Sections I and II, Section III of the Demonstration included: a "ramp-up" analysis of the event data that showed satellite imagery, general wind speed, gust, and direction in the upwind areas, locations of NWS advisories, and hourly PM_{10} concentrations measured at Brawley, Calexico, El Centro, Niland and Westmorland; a 72-hour time series of PM_{10} concentrations measured at monitoring sites in Imperial County and visibility from regional NWS stations; tables of wind speed, gust, and direction measurements at selected meteorological sites in the area and PM_{10} concentrations from monitoring sites in Imperial County; and Air Quality Index (AQI) Information.

Appendix A of the Demonstration included NWS urgent weather messages and advisories. Consistent with the discussion in Sections I, II, and III of the Demonstration, NWS San Diego, CA issued a wind advisory for San Diego County Deserts at 3:08 PM PDT on April 16, 2018, which was in effect from 12:00 AM PDT to 5:00AM PDT on April 16, 2018 and stated that "there will also be areas of areas of blowing dust and sand which will reduce visibility at times."[117] NWS Phoenix, AZ issued a wind advisory for areas in Imperial County at 1:15 PM PDT on April 15, 2018, which was in effect from 2:00 PM PDT to 9:00 PM PDT on April 16, 2018.

Appendix B of the Demonstration included Quality Controlled Local Climatological Data for NWS airport sites in Imperial, Riverside, and San Diego counties. These data show weather types of haze (HZ) observed at Imperial County Airport NWS Station from 17:53 to 20:06, 21:37, 21:48 and 23:53, and dust (DU) at El Centro NAF NWS station from 15:56 to 23:56 on April 16, 2018.

Appendix C[118] of the Demonstration included weather story information from the San Diego and Phoenix NWS offices, AQI information, the Imperial County No Burn Day determination for April 16, 2018, district complaint for April 16, 2018, and the public comment notice (affidavit).

In the Demonstration, ICAPCD concluded that "high gusty westerly winds transported fugitive emissions from open natural Mountain and desert areas, located within the San Diego County and Imperial County (all part of the Sonoran Desert)."[119]

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[116] Demonstration, Section IV
[117] Demonstration, Appendix A
[118] On December 6, 2019, CARB sent a revised Appendix C for the April 16, 2018 event to EPA (email from Theresa Najita, California Air Resources Board, to Gwen Yoshimura, EPA Region IX, "Imperial PM10 Exceptional Event – Revised Appendix C for April 16, 2018 documentation," dated December 6, 2019). The version of Appendix C originally submitted on October 29, 2019 contained an incorrect date and referenced but did not include a complaint from a member of the public to the District. The revised Appendix C corrected these administrative errors.
[119] Demonstration, Section VI

EPA conclusion regarding CCR criterion

The analyses included in the Demonstration, specifically, the evaluation of several years of PM_{10} monitoring data, numerous time-series graphs and tables of wind speed, wind gusts, wind direction, and hourly PM_{10} concentrations throughout Imperial County, the "ramp-up" analysis, NOAA HYSPLIT back trajectory analysis, NWS station reports of reduced visibility, haze, and dust, and the issuance of a NWS wind advisory and high wind warning sufficiently demonstrate that high wind speeds in upwind areas caused emissions from open natural Mountain and desert areas, located within the San Diego County and Imperial County, which were transported to Brawley Calexico, El Centro, Niland and Westmorland and caused exceedances of the 24-hour PM_{10} NAAQS. Therefore, the Demonstration shows a clear causal relationship between the high wind dust event emissions and the exceedances measured at Brawley Calexico, El Centro, Niland and Westmorland.

Table E.4: Documentation of CCR

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 16, 2018	Section I, II, III, IV, VI Appendices A, B, and C	Sufficient	Yes

4. Natural Event

ICAPCD stated in the Demonstration that the "PM_{10} exceedance[s] that occurred at the Brawley, Calexico, El Centro, Niland, and Westmorland monitors on April 16, 2018, [were] caused by the transport of windblown dust into Imperial County by strong westerly winds associated with a large low pressure system that passed through the region,"[120] and provided evidence that the emissions originated from open natural mountain and desert areas west of Imperial County and that reasonable controls on contributing anthropogenic sources were in place at the time of the event.

Natural event conclusion

The CCR and nRCP analyses demonstrate that event-related emissions of windblown dust were from natural undisturbed lands and that upwind anthropogenic sources were subject to reasonable controls at the time of the event. Therefore, the EPA is satisfied that the high wind dust event met the definition of a natural event.

Table E.5: Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 16, 2018	Section I, II, III, IV, V, VI	Sufficient	Yes

5. Schedule and Procedural Requirements

[120] Demonstration, Section VI

In addition to technical Demonstration requirements, 40 CFR §50.14(c) and 40 CFR §51.930 specify schedule and procedural requirements an air agency must follow to request data exclusion. Table E.6 outlines the EPA's evaluation of these requirements.

Table E.6: Schedules and Procedural Criteria

Criterion	Reference	Demonstration Citation	Criterion Met?
Did the agency provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Sufficient	Yes
Did the agency submit an Initial Notification of Potential Exceptional Event and flag the affected data in the EPA's Air Quality System (AQS)?	40 CFR §50.14 (c)(2)(i)	Sufficient	Yes
If applicable, did the initial notification and demonstration submittals meet the deadlines for data influenced by exceptional events for use in initial area designations? Or the deadlines established by the EPA during the Initial Notification of Potential Exceptional Events process, if applicable?	40 CFR §50.14 Table 2 40 CFR §50.14 (c)(2)(i)(B)	Sufficient	Yes
Was the public comment process followed and documented? • Did the agency document that the comment period was open for a minimum of 30 days? • Did the agency submit to the EPA any public comments received? • Did the state address comments disputing or contradicting factual evidence provided in the demonstration?	40 CFR §50.14 (c)(3)(v)	Sufficient	Yes
Has the agency met requirements regarding submission of a mitigation plan, if applicable?	40 CFR §51.930 (b)	NA	NA

6. Conclusion

The EPA has reviewed the documentation provided by CARB and ICAPCD to support the conclusion that a high wind dust event caused exceedances of the 24-hour PM_{10} NAAQS at Brawley, Calexico, El Centro, Niland and Westmorland on April 16, 2018. The EPA has determined that the flagged exceedances at these monitoring stations on this day meet the definition of an exceptional event: the high wind dust event affected air quality in such a way that there exists a clear causal relationship between the event and the monitored exceedances, was not reasonably preventable or controllable, and meets the definition of a natural event. The EPA has also determined that CARB and ICAPCD have satisfied the schedule and procedural requirements for data exclusion.

F. Event Day: April 19, 2018

Table F.1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m³)
April 19, 2018	Brawley	06-025-0007-3	334
April 19, 2018	Calexico	06-025-0005-3	178
April 19, 2018	Westmorland	06-025-4003-3	186

1. Narrative Conceptual Model

Sections I and II of the Demonstration provided a narrative conceptual model of the event and included characteristics of Imperial County, such as general description of the geography, topography, and meteorology, and a description and map of the ambient air quality monitoring network and meteorological sites (see Figure F.1).

Figure F.1: Monitoring Sites in Imperial County[121]

Sections I and II of the Demonstration further described the event-specific characteristics and

[121] Demonstration, Section I

included ICAPCD's conclusion that the exceedances measured at the Brawley, Calexico, and Westmorland monitoring stations (Brawley, Calexico, and Westmorland) were caused by "a forecasted upper level trough of low pressure [that] moved inland from the Pacific coast over California …[and] [t]he strong gusty westerly winds associated with the deep storm system generated emissions from within the open mountain ranges and surrounding open natural deserts within San Diego and Imperial Counties,"[122] and that the exceedances qualify as an exceptional event under the EER. ICAPCD summarized the event and included a table of hourly PM_{10} concentrations measured on April 18-20, 2018 at monitoring sites in Riverside, Imperial and Yuma counties, a 72-hour time-series of PM_{10} concentration profiles for monitoring sites in the area, two 72-hour time series of wind speed and wind gust measurements from select meteorological sites in the area, and April 19, 2018, 00:00 AM and 7:00 AM PST 12-hour NOAA Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) back trajectories from monitoring sites in the area.

Based on the information described above, ICAPCD's Demonstration satisfies the narrative conceptual model criterion of the EER.

Table F.2: Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 19, 2018	Sections I and II	Sufficient	Yes

2. Not Reasonably Controllable or Preventable (nRCP)

High wind threshold

ICAPCD provided documentation showing that sustained wind speeds associated with the event were above the EPA's 25 mph high wind threshold on April 19, 2018. For example, maximum sustained wind speeds of 44 mph with gusts of 49 mph were measured at the El Centro NAF National Weather Service (NWS) station.

Identification of contributing sources

ICAPCD analysis shows satellite imagery and HYSPLIT back trajectories originating from the five PM_{10} monitoring sites in Imperial County.[123] The Demonstration states that "strong gusty westerly winds blew over open natural desert areas southwest and west of Imperial County."[124]

Identification of reasonable controls

In Section V, ICAPCD provided detailed information on the current set of required controls in the Imperial County PM_{10} nonattainment area, including information on nonattainment status and a description and timeline of implementation of Regulation VIII, which includes Rules 800, 801, 802, 803, 804, 805, and 806. Regulation VIII was adopted by ICAPCD on October 16, 2012, and

[122] Demonstration, Section II
[123] Demonstration, Section II
[124] Demonstration, Section II

Rules 800, 804, 805 and 806 were approved by the EPA as Best Available Control Measure (BACM) level rules on April 22, 2013, with an effective date of May 22, 2013. Regulation VIII addresses the desert open areas managed by the Bureau of Land Management (BLM), U.S. Border Patrol, the California Department of Parks, and construction, open areas, track out, paved and unpaved roads, and agricultural operations.[125] ICAPCD also notes that "[b]oth permitted and non-permitted sources are required to comply with Regulation VIII requirements that address fugitive dust emissions."[126]

As identified above, the Demonstration states that the potential source area includes "open natural desert areas southwest and west of Imperial."[127] This statement is supported by the HYSPLIT back trajectory analysis, which shows portions of the trajectories passing through the southeastern portion of San Diego County and Mexico before continuing into Imperial County.[128] Based on a review of satellite imagery, the area west of the monitors in Imperial and San Diego counties appears to predominately natural desert that transitions to mountainous terrain over 3000 ft in elevation. San Diego County is currently a PM_{10} attainment area with no federally required PM_{10} SIP control measures. San Diego County does have local control measures that reduce PM (including PM_{10}) from sources such as: Rule 50 Visible Emissions, Rule 51 Nuisance, Rule 52 Particulate Matter, Rule 54 Dust and Fumes, Rule 55 Fugitive Dust Control, and Rule 101 Burning Control. An assessment of reasonable controls in Mexico is not required, as sources in Mexico are not within ICAPCD's or CARB's jurisdictional boundaries.[129]

Evidence of effective implementation and enforcement

ICAPCD provided information on source-permitted inspections and public complaints that occurred during the event and stated in the Demonstration that "[a]n evaluation of all inspection reports, air quality complaints, compliance reports, and other documentation indicate no evidence of unusual anthropogenic-based PM_{10} emissions, officially declared as a No Burn Day, related to agricultural burning, waste burning or dust."[130]

Not reasonably preventable

While high wind dust events do not require a case-specific justification that the event was also not reasonably preventable,[131] ICAPCD's Demonstration discusses this criterion and states that "[t]he PM_{10} exceedance[s] measured at the Brawley, Westmorland and Calexico monitors were caused by naturally occurring strong gusty westerly winds that transported windblown dust into Imperial County and other parts of southern California from areas located within the Sonoran Desert regions to the west of Imperial County," and, therefore, a specific showing of the not reasonably preventable criterion is not required.[132]

[125] Demonstration, Section V
[126] Demonstration, Section V
[127] Demonstration, Section II
[128] Demonstration, Section II
[129] 40 CFR part 50.14 (b)(8)(vii)
[130] Demonstration, Section V
[131] 40 CFR part 50.14 (b)(5)(iv)
[132] Demonstration, Section VI

EPA conclusion regarding nRCP criterion

Generally, State Implementation Plan (SIP) rules must be enforceable and must not relax existing requirements (see CAA sections 110(l) and 193). Rules implementing BACM and Best Available Control Technologies (BACT) are required in serious PM_{10} nonattainment areas (see CAA sections 189(a)(1) and 189(b)(1)). ICAPCD regulates a PM_{10} nonattainment area classified as serious (see 40 CFR part 81), so the applicable SIP should contain rules that implement BACM on contributing anthropogenic sources of windblown dust.

On July 8, 2010,[133] the EPA approved versions of the rules that comprise Regulation VIII, but required revisions to Rules 800, 804, 805, and 806. On April 22, 2013, the EPA fully approved these rule revisions into the California SIP. [134] The final rule also stated that the "EPA's preliminary view is that the Regulation VIII rules as revised in October 2012 constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the exceptional events rule, including reasonable and appropriate control measures on significant contributing anthropogenic sources."[135] The most recent BACM determinations for the rules are within five years of the date of the event, and the EPA considers the controls to constitute reasonable controls for this event.

The EPA also considers the control measures in place in San Diego County to be reasonable controls for this event based on San Diego's PM_{10} attainment status and the back-trajectory analysis showing the trajectory passing through a portion of San Diego County that appears to be predominately natural desert and mountainous areas with few sources of anthropogenic windblown dust. Therefore, the EPA is satisfied that the nRCP criterion of the EER is met.

Table F.3: Documentation of nRCP

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 19, 2018	Section II, V, and VI	Sufficient	Yes

3. Clear Causal Relationship (CCR)

Comparison with historical concentrations

In Section IV of the Demonstration, ICAPCD included a comparison with historical concentrations, as required by 40 CFR §50.14(c)(3)(iv)(C). In the Demonstration, ICAPCD compared the event-related PM_{10} concentrations with concentrations from 2010-2018 by highlighting the event day compared to routine data throughout the year and the season in which the exceedances occurred (April – June). The analysis also showed that the 24-hour PM_{10} concentration on the exceedance day was "outside the normal historical concentrations when compared to event and non-event days."[136]

[133] 75 FR 39366
[134] 78 FR 23677
[135] 78 FR 23682
[136] Demonstration, Section IV

Evidence of transport of high wind dust emissions from the source area to the monitor

In addition to analyses presented in Sections I and II, Section III of the Demonstration included: a "ramp-up" analysis of the event data that showed satellite imagery, general wind speed, gust, and direction in the upwind areas, locations of NWS advisories, and hourly PM_{10} concentrations measured at monitoring sites in the area; a 72-hour time series of PM_{10} concentrations measured at monitoring sites in Imperial County and visibility from regional NWS stations; tables of wind speed, gust, and direction measurements at selected meteorological sites in the area and PM_{10} concentrations from monitoring sites in Imperial County; and Air Quality Index information (AQI).

Appendix A of the Demonstration included NWS urgent weather messages and advisories. Consistent with the discussion in Sections I, II, and III of the Demonstration, NWS San Diego, CA issued a high wind warning for the San Diego mountains and deserts at 14:04 PDT on April 18, 2018, which was in effect from 11:00 PM PDT on Wednesday, April 18, 2018, to 2:00 AM PDT on Friday, April 20, 2018, and stated that "[s]trong and gusty winds over portions of the mountains and deserts this evening through Thursday night…[and] [v]isibility...[will be] [l]ess than a mile at times in blowing dust and sand."[137] NWS Phoenix, AZ issued a wind advisory for Imperial County Southwest and West at 3:20 AM MST on April 19, 2018, which remained in effect until 7:00 PM PDT on April 18, 2018, and stated that "[w]inds may cause areas of blowing dust."[138]

Appendix B of the Demonstration included Quality Controlled Local Climatological Data for NWS airport sites in Imperial, Riverside, and San Diego counties. On April 19, 2018, these data show weather types of haze (HZ) observed from 01:56 to 04:45 hours and dust (DU) observed from 05:27 to 06:56 and at 11:56 at the El Centro NAF NWS station. These data show also weather types of HZ observed from 03:02 to 03:46, 04:40, and from 05:32 to 08:15 hours at the Imperial County Airport NWS station on April 19, 2018.

Appendix C of the Demonstration included weather story information from the San Diego and Phoenix NWS offices, AQI information, the Imperial County No Burn Day determination for April 19, 2018, and the public comment notice (affidavit).

In the Demonstration, ICAPCD concluded that "high gusty westerly winds transported fugitive emissions from open natural Mountain and desert areas, located within San Diego County, Mexico and Imperial County (all part of the Sonoran Desert)."[139]

EPA conclusion regarding CCR criterion

The analyses included in the Demonstration, specifically, the evaluation of several years of PM_{10} monitoring data, numerous time-series graphs and tables of wind speed, wind gusts, wind direction, and hourly PM_{10} concentrations throughout Imperial County, the "ramp-up" analysis, NOAA HYSPLIT back trajectory analysis, NWS station reports of dust, reduced visibility, and

[137] Demonstration, Appendix A
[138] Demonstration, Appendix A
[139] Demonstration, Section VI

haze, and the issuance of a NWS wind advisory and high wind warning sufficiently demonstrate that high wind speeds in upwind areas caused emissions from open natural desert areas southwest and west of Imperial, which were transported to Brawley, Calexico, and Westmorland and caused an exceedance of the 24-hour PM_{10} NAAQS. Therefore, the Demonstration shows a clear causal relationship between the high wind dust event emissions and the exceedances measured at Brawley, Calexico, and Westmorland.

Table F.4: Documentation of CCR

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 19, 2018	Section I, II, III, IV, VI Appendices A, B, and C	Sufficient	Yes

4. Natural Event

ICAPCD stated in the Demonstration that "the PM_{10} exceedance that occurred at Brawley, Westmorland, and Calexico monitors on April 19, 2018, was caused by the transport of windblown dust into Imperial County by strong gusty westerly winds associated with an upper level trough of low pressure that passed through the region…[and] [a]t the time of the event, anthropogenic sources, within Imperial County were reasonably controlled with BACM…[and] [t]he event therefore qualifies as a natural event,"[140] and provided evidence that the emissions originated from open natural desert areas southwest and west of Imperial and that reasonable controls on contributing anthropogenic sources were in place at the time of the event.

Natural event conclusion

The CCR and nRCP analyses demonstrate that event-related emissions of windblown dust were from natural undisturbed lands and that upwind anthropogenic sources were subject to reasonable controls at the time of the event. Therefore, the EPA is satisfied that the high wind dust event met the definition of a natural event.

Table F.5: Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 19, 2018	Section I, II, III, IV, V, VI	Sufficient	Yes

5. Schedule and Procedural Requirements

In addition to technical Demonstration requirements, 40 CFR §50.14(c) and 40 CFR §51.930 specify schedule and procedural requirements an air agency must follow to request data exclusion. Table F.6 outlines the EPA's evaluation of these requirements.

[140] Demonstration, Section VI

Table F.6: Schedules and Procedural Criteria

Criterion	Reference	Demonstration Citation	Criterion Met?
Did the agency provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Sufficient	Yes
Did the agency submit an Initial Notification of Potential Exceptional Event and flag the affected data in the EPA's Air Quality System (AQS)?	40 CFR §50.14 (c)(2)(i)	Sufficient	Yes
If applicable, did the initial notification and demonstration submittals meet the deadlines for data influenced by exceptional events for use in initial area designations? Or the deadlines established by the EPA during the Initial Notification of Potential Exceptional Events process, if applicable?	40 CFR §50.14 Table 2 40 CFR §50.14 (c)(2)(i)(B)	Sufficient	Yes
Was the public comment process followed and documented? • Did the agency document that the comment period was open for a minimum of 30 days? • Did the agency submit to the EPA any public comments received? • Did the state address comments disputing or contradicting factual evidence provided in the demonstration?	40 CFR §50.14 (c)(3)(v)	Sufficient	Yes
Has the agency met requirements regarding submission of a mitigation plan, if applicable?	40 CFR §51.930 (b)	NA	NA

6. Conclusion

The EPA has reviewed the documentation provided by CARB and ICAPCD to support the conclusion that a high wind dust event caused exceedances of the 24-hour PM_{10} NAAQS at Brawley, Calexico, and Westmorland on April 19, 2018. The EPA has determined that the flagged exceedances at these monitoring stations on this day meet the definition of an exceptional event: the high wind dust event affected air quality in such a way that there exists a clear causal relationship between the event and the monitored exceedances, was not reasonably preventable or controllable, and meets the definition of a natural event. The EPA has also determined that CARB and ICAPCD have satisfied the schedule and procedural requirements for data exclusion.

G. Event Days: April 29, 2018, April 30, 2018, May 1, 2018

Table G.1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m³)
April 29, 2018	Brawley	06-025-0007-3	310
April 29, 2018	Niland	06-025-4004-3	243
April 29, 2018	Westmorland	06-025-4003-3	206
April 30, 2018	Brawley	06-025-0007-3	270
April 30, 2018	Niland	06-025-4004-3	162
April 30, 2018	Westmorland	06-025-4003-3	207
May 1, 2018	Brawley	06-025-0007-3	157

1. Narrative Conceptual Model

Sections I and II of the Demonstration provided a narrative conceptual model of the event and included characteristics of Imperial County, such as general description of the geography, topography, and meteorology, and a description and map of the ambient air quality monitoring network and meteorological sites (see Figure G.1).

Figure G.1: Monitoring Sites in Imperial County[141]

[141] Demonstration, Section I

Sections I and II of the Demonstration further described the event-specific characteristics and included ICAPCD's conclusion that the exceedances measured at the Brawley, Niland, and Westmorland monitoring stations (Brawley, Niland, Westmorland) were caused by "several forecasted low pressure systems [that] moved across the region in rapid succession…[and] [t]he strong gusty westerly winds associated with the systems generated emissions from within the open mountain ranges and surrounding open natural deserts within San Diego and Imperial Counties,"[142] and that the exceedances qualify as an exceptional event under the EER. ICAPCD summarized the event and included a table of hourly PM_{10} concentrations measured on April 28-May 2, 2018, at monitoring sites in Riverside, Imperial and Yuma counties; a 120-hour time-series of PM_{10} concentration profiles for monitoring sites in the area; two 120-hour time series of wind speed and wind gust measurements from select meteorological sites in the area; and 1:00 AM and 5:00 PM PST April 29, 2018 12-hour, 6:00 PM PST April 30, 2018 24-hour, and 5:00 PM PST May 1, 2018 24-hour NOAA Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) back trajectories from monitoring sites in the area.

Based on the information described above, ICAPCD's Demonstration satisfies the narrative conceptual model criterion of the EER.

Table G.2: Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 29-May 1, 2018	Sections I and II	Sufficient	Yes

2. Not Reasonably Controllable or Preventable (nRCP)

High wind threshold

ICAPCD provided documentation showing that sustained wind speeds associated with the event were above the EPA's 25 mph high wind threshold on April 29, 2018, April 30, 2018, and May 1, 2018. For example, maximum sustained wind speeds of 33 mph with gusts of 43 mph were measured at the El Centro NAF National Weather Service (NWS) station on April 29, 2018. Maximum sustained wind speeds of 40 mph ,with gusts of 51 mph were measured at the El Centro NAF NWS station on April 30, 2018, and maximum sustained wind speeds of 36 mph with gusts of 45 mph were measured at the El Centro NAF NWS station on May 1, 2018.

Identification of contributing sources

ICAPCD analysis shows satellite imagery and HYSPLIT back trajectories originating from the five PM_{10} monitoring sites in Imperial County and other monitoring sites in Riverside and Yuma counties.[143] The Demonstration states that "strong gusty westerly winds blew over open natural mountains and desert areas west of Imperial County."[144]

[142] Demonstration, Section II
[143] Demonstration, Section II
[144] Demonstration, Section II

Identification of reasonable controls

In Section V, ICAPCD provided detailed information on the current set of required controls in the Imperial County PM_{10} nonattainment area, including information on nonattainment status and a description and timeline of implementation of Regulation VIII, which includes Rules 800, 801, 802, 803, 804, 805, and 806. Regulation VIII was adopted by ICAPCD on October 16, 2012, and Rules 800, 804, 805 and 806 were approved by the EPA as Best Available Control Measure (BACM) level rules on April 22, 2013, with an effective date of May 22, 2013. Regulation VIII addresses the desert open areas managed by the Bureau of Land Management (BLM), U.S. Border Patrol, the California Department of Parks, and construction, open areas, track out, paved and unpaved roads, and agricultural operations.[145] ICAPCD also notes that "[b]oth permitted and non-permitted sources are required to comply with Regulation VIII requirements that address fugitive dust emissions."[146]

As identified above, the Demonstration states that the potential source area includes "open natural mountains and desert areas west of Imperial County."[147] This statement is supported by the HYSPLIT back trajectory analysis, which shows the trajectories passing through the southeastern portion of San Diego County before continuing into Imperial County.[148] Based on a review of satellite imagery, this area appears to be predominately natural desert that transitions to mountainous terrain over 3000 ft in elevation. San Diego County is currently a PM_{10} attainment area with no federally required PM_{10} SIP control measures. San Diego County does have local control measures that reduce PM (including PM_{10}) from sources such as: Rule 50 Visible Emissions, Rule 51 Nuisance, Rule 52 Particulate Matter, Rule 54 Dust and Fumes, Rule 55 Fugitive Dust Control, and Rule 101 Burning Control.

Evidence of effective implementation and enforcement

ICAPCD provided information on source-permitted inspections and public complaints that occurred during the event and stated in the Demonstration that it evaluated inspection reports, air quality complaints, compliance reports, and other documentation and found no evidence of unusual anthropogenic-based PM_{10} emissions on April 29, 2018, and April 30, 2018. ICAPCD also stated that April 29, 2018, and April 30, 2018, were "officially declared as a [sic] No Burn Days, related to agricultural burning, waste burning or dust."[149] Appendix C of the Demonstration also includes a "No Burn" declaration for May 1, 2018. ICAPCD stated that it received one complaint on May 1, 2018, related to dust. The location of the incident was near the construction of the international border wall along the United States-Mexico international border. ICAPCD stated "the site was located beyond the prevailing wind direction that entrained and transported dust to the Brawley monitor, which was the only monitor to exceed on May 1,

[145] Demonstration, Section V
[146] Demonstration, Section V
[147] Demonstration, Section II
[148] Demonstration, Section II
[149] Demonstration, Section V

2018."[150] ICAPCD also noted, "[t]his project was issued an exemption status by the United States from any environmental regulations or conditions."[151]

Not reasonably preventable

While high wind dust events do not require a case-specific justification that the event was also not reasonably preventable,[152] ICAPCD's Demonstration discusses this criterion and states that "[t]he PM_{10} exceedance[s] measured at the Brawley, Westmorland and Niland monitors… [were] caused by naturally occuring strong gusty westerly winds that transported windblown dust into Imperial County and other parts of southern California from areas located within the Sonoran Desert regions to the west-southwest and west of Imperial County" and, therefore, a specific showing of the not reasonably preventable criterion is not required.[153]

EPA conclusion regarding nRCP criterion

Generally, State Implementation Plan (SIP) rules must be enforceable and must not relax existing requirements (see CAA sections 110(l) and 193). Rules implementing BACM and Best Available Control Technologies (BACT) are required in serious PM_{10} nonattainment areas (see CAA sections 189(a)(1) and 189(b)(1)). ICAPCD regulates a PM_{10} nonattainment area classified as serious (see 40 CFR part 81), so the applicable SIP should contain rules that implement BACM on contributing anthropogenic sources of windblown dust.

On July 8, 2010,[154] the EPA approved versions of the rules that comprise Regulation VIII, but required revisions to Rules 800, 804, 805, and 806. On April 22, 2013, the EPA fully approved these rule revisions into the California SIP. [155] The final rule also stated that the "EPA's preliminary view is that the Regulation VIII rules as revised in October 2012 constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the exceptional events rule, including reasonable and appropriate control measures on significant contributing anthropogenic sources."[156] The most recent BACM determinations for the rules are not within five years of the date of the event, but the EPA considers the controls to continue to constitute reasonable controls based on our review of analogous rules in other PM_{10} nonattainment areas and because the latest available emissions inventory information indicates that the significant source categories remain the same in Imperial County as they were when the BACM determinations were last made.[157]

The EPA also considers the control measures in place in San Diego County to be reasonable controls for this event based on San Diego's PM_{10} attainment status and the back-trajectory analysis showing the trajectory passing through a portion of San Diego County that appears to be

[150] Demonstration, Section V
[151] Demonstration, Section V
[152] 40 CFR part 50.14 (b)(5)(iv)
[153] Demonstration, Section VI
[154] 75 FR 39366
[155] 78 FR 23677
[156] 78 FR 23682
[157] TSD Addendum (December 2019); CARB, CEPAM: 2016 SIP – Standard Emission Tool, Emissions Projections for Imperial County, December 5, 2019.

predominately natural desert and mountainous areas with few sources of anthropogenic windblown dust. Therefore, the EPA is satisfied that the nRCP criterion of the EER is met.

Table G.3: Documentation of nRCP

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 29-May 1, 2018	Section II, V, and VI	Sufficient	Yes

3. Clear Causal Relationship (CCR)

Comparison with historical concentrations

In Section IV of the Demonstration, ICAPCD included a comparison with historical concentrations, as required by 40 CFR §50.14(c)(3)(iv)(C). In the Demonstration, ICAPCD compared the event-related PM_{10} concentrations with concentrations from 2010-2018 by highlighting the event days compared to routine data throughout the year and the season in which the exceedances occurred (April – June). The analysis also showed that the 24-hour PM_{10} concentrations on the exceedance days were "clearly outside the normal concentration levels when comparing to similar event days and non-event days."[158]

Evidence of transport of high wind dust emissions from the source area to the monitor

In addition to analyses presented in Sections I and II, Section III of the Demonstration included: "ramp-up" analyses of the event data that showed satellite imagery, general wind speed, gust, and direction in the upwind areas, locations of NWS advisories, and hourly PM_{10} concentrations measured at Imperial County monitors on April 29, 2018, April 30, 2018, and May 1, 2018; a 120-hour time series of PM_{10} concentrations measured at monitoring sites in Imperial County and visibility from regional NWS stations; tables of wind speed, gust, and direction measurements at selected meteorological sites in the area and PM_{10} concentrations from monitoring sites in Imperial County, and Air Quality Index (AQI) information for Brawley, Niland, and Westmorland monitors on April 29-May 1, 2018.

Appendix A of the Demonstration included NWS urgent weather messages and advisories. Consistent with the discussion in Sections I, II, and III of the Demonstration, NWS Phoenix, AZ issued a wind advisory for southwest and west Imperial County at 1:36 PM MST on April 28, 2018, which remained in effect from 2:00 PM PDT on April 29, 2018 to 2:00 AM PDT on April 30, 2018 and stated that there would be "[w]est winds [of] 30 to 35 mph with localized gusts [of] 40 to 50 mph,"[159] and "areas of dense blowing dust are possible."[160]

NWS San Diego, CA issued a wind advisory for areas including the San Diego County Mountains at 3:40 PM PDT on April 28, 2018, which remained in effect until 5:00 AM PDT on April 30, 2018 and stated that winds would be out of the "[w]est [at] 20 to 30 mph with gusts to

[158] Demonstration, Section IV
[159] Demonstration, Appendix A
[160] Demonstration, Appendix A

50 mph,"[161] there would be "[i]solated gusts to 60 mph along the desert slopes in San Diego County," and visibility would be "reduced to 1 mile or less in blowing dust and sand."[162]

NWS Phoenix, AZ issued a wind advisory for Imperial Valley, including El Centro and Brawley, at 3:31 AM MST on April 29, 2018, which was in effect from 2:00 PM PDT on April 29, 2018, to 2:00 AM PDT April 30, 2018, and stated that "[v]ery strong winds [would] develop during the latter half of th[e] afternoon,"[163] there would be "[w]est winds [at] 30 to 35 mph with gusts [of] 40 to 50 mph," and there would be "[d]angerous driving conditions due to suddenly reduced visibility at times in blowing dust."[164]

NWS Phoenix, AZ issued a wind advisory for southwest Imperial County at 4:44 AM MST on April 30, 2018, which remained in effect from 4:00 PM PDT on April 30, 2018 to 5:00 AM PDT May 2, 2018, and stated that "[s]trong winds [would] develop in the latter part of the afternoon and continue through the night,"[165] there would be "[w]est winds of 25-35 mph with gusts of 40-50 mph," and there would be "[d]angerous driving conditions…and the potential for blowing dust to cause sudden reduced visibility."[166]

NWS Phoenix, AZ issued a wind advisory for the central and eastern portions of Imperial County at 1:40 MST on May 1, 2018, which remained in effect from 2:00 PM PDT to 11:00 PM PDT on May 1, 2018, and stated that there would be "[w]est winds of 25-35 mph with gusts of 40-50 mph"[167] and "[d]angerous driving conditions due [to] area of blowing dust and sand."[168]

Appendix B of the Demonstration included Quality Controlled Local Climatological Data for NWS airport sites in Imperial, Riverside, San Diego, and Yuma counties. These data show weather types of haze (HZ) observed at 18:56 hours and blowing dust (DU) observed at 19:39, 19:48, 19:56, and at 20:56 hours on April 30, 2018, and HZ and DU observed at 13:30 and 13:38, respectively, on May 1, 2018, at the El Centro NAF NWS station.

Appendix C of the Demonstration included maps of NWS public service zones, Imperial County web postings of potential elevated PM concentrations for April 27-May 1, 2018, weather story information from the San Diego and Phoenix NWS offices, NOAA satellite smoke text product information, AQI information, the Imperial County No Burn Day determinations for April 29-May 1, 2018, a dust complaint from May 1, 2018, and the public comment notice (affidavit).

In the Demonstration, ICAPCD concluded that "high gusty westerly winds transported fugitive emissions from open natural Mountain and desert areas, located within San Diego County and Imperial County (all part of the Sonoran Desert)."[169]

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[161] Demonstration, Appendix A
[162] Demonstration, Appendix A
[163] Demonstration, Appendix A
[164] Demonstration, Appendix A
[165] Demonstration, Appendix A
[166] Demonstration, Appendix A
[167] Demonstration, Appendix A
[168] Demonstration, Appendix A
[169] Demonstration, Section VI

EPA conclusion regarding CCR criterion

The analyses included in the Demonstration, specifically, the evaluation of several years of PM_{10} monitoring data, numerous time-series graphs and tables of wind speed, wind gusts, wind direction, and hourly PM_{10} concentrations throughout Imperial County, the "ramp-up" analysis, NOAA HYSPLIT back trajectory analysis, NWS station reports of reduced visibility, haze, and blowing dust, and the issuance of NWS wind advisories sufficiently demonstrate that high wind speeds in upwind areas caused emissions from natural desert areas and reasonably controlled local anthropogenic sources to the southwest of Brawley, Niland, and Westmorland, which were transported to Brawley, Niland, and Westmorland and caused exceedances of the 24-hour PM_{10} NAAQS. Therefore, the Demonstration shows a clear causal relationship between the high wind dust event emissions and the exceedances measured at Brawley, Niland, and Westmorland.

Table G.4: Documentation of CCR

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 29-May 1, 2018	Section I, II, III, IV, VI Appendices A, B, and C	Sufficient	Yes

4. Natural Event

ICAPCD stated in the Demonstration that "the PM_{10} exceedance[s] that occurred at Brawley, Niland, and Westmorland monitors [on] April 29, 2018 to May 1, 2018… [were] caused by the transport of windblown dust into Imperial County by strong westerly winds associated with a series of low-pressure systems that passed through the region…[and] [a]t the time of the event, anthropogenic sources, within Imperial County were reasonably controlled with BACM…[and] [t]he event therefore qualifies as a natural event,"[170] and provided evidence that the emissions originated from desert areas located to the southwest of Brawley, Niland, and Westmorland in Imperial and San Diego counties and that reasonable controls on contributing anthropogenic sources were in place at the time of the event.

Natural event conclusion

The CCR and nRCP analyses demonstrate that event-related emissions of windblown dust were from natural undisturbed lands and that upwind anthropogenic sources were subject to reasonable controls at the time of the event. Therefore, the EPA is satisfied that the high wind dust event met the definition of a natural event.

Table G.5: Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 29-May 1, 2018	Section I, II, III, IV, V, VI	Sufficient	Yes

[170] Demonstration, Section VI

5. Schedule and Procedural Requirements

In addition to technical Demonstration requirements, 40 CFR §50.14(c) and 40 CFR §51.930 specify schedule and procedural requirements an air agency must follow to request data exclusion. Table G.6 outlines the EPA's evaluation of these requirements.

Table G.6: Schedules and Procedural Criteria

Criterion	Reference	Demonstration Citation	Criterion Met?
Did the agency provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Sufficient	Yes
Did the agency submit an Initial Notification of Potential Exceptional Event and flag the affected data in the EPA's Air Quality System (AQS)?	40 CFR §50.14 (c)(2)(i)	Sufficient	Yes
If applicable, did the initial notification and demonstration submittals meet the deadlines for data influenced by exceptional events for use in initial area designations? Or the deadlines established by the EPA during the Initial Notification of Potential Exceptional Events process, if applicable?	40 CFR §50.14 Table 2 40 CFR §50.14 (c)(2)(i)(B)	Sufficient	Yes
Was the public comment process followed and documented? • Did the agency document that the comment period was open for a minimum of 30 days? • Did the agency submit to the EPA any public comments received? • Did the state address comments disputing or contradicting factual evidence provided in the demonstration?	40 CFR §50.14 (c)(3)(v)	Sufficient	Yes
Has the agency met requirements regarding submission of a mitigation plan, if applicable?	40 CFR §51.930 (b)	NA	NA

6. Conclusion

The EPA has reviewed the documentation provided by CARB and ICAPCD to support the conclusion that a high wind dust event caused exceedances of the 24-hour PM_{10} NAAQS at Brawley, Niland, and Westmorland on April 29, 2018, April 30, 2018, and May 1, 2018. The EPA has determined that the flagged exceedances at these monitoring stations on these days meet the definition of an exceptional event: the high wind dust event affected air quality in such a way that there exists a clear causal relationship between the event and the monitored

exceedances, was not reasonably preventable or controllable, and meets the definition of a natural event. The EPA has also determined that CARB and ICAPCD have satisfied the schedule and procedural requirements for data exclusion.

H. Event Day: May 11, 2018

Table H.1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m³)
May 11, 2018	Brawley	06-025-0007-3	335
May 11, 2018	El Centro	06-025-1003-4	166
May 11, 2018	Niland	06-025-4004-3	215
May 11, 2018	Westmorland	06-025-4003-3	414

1. Narrative Conceptual Model

Sections I and II of the Demonstration provided a narrative conceptual model of the event and included characteristics of Imperial County, such as general description of the geography, topography, and meteorology, and a description and map of the ambient air quality monitoring network and meteorological sites (see Figure H.1).

Figure H.1: Monitoring Sites in Imperial County[171]

[171] Demonstration, Section I

Sections I and II of the Demonstration further described the event-specific characteristics and included ICAPCD's conclusion that the exceedances measured at the Brawley, El Centro, Niland and Westmorland monitoring stations (Brawley, El Centro, Niland, Westmorland) were caused by "a forecasted upper level trough [that] moved inland from the Pacific coast over California…[and] [t]he strong gusty westerly winds associated with the system generated emissions from within the open mountain ranges and surrounding open natural deserts within San Diego and Imperial Counties…[and] [t]hese windblown dust emissions were transported to all the Imperial County regional air quality monitors,"[172] and that the exceedances qualify as an exceptional event under the EER. ICAPCD summarized the event and included a table of hourly PM_{10} concentrations measured on May 10-12, 2018 at monitoring sites in Riverside, Imperial and Yuma counties, a 72-hour time-series of PM_{10} concentration profiles for monitoring sites in the area, two 72-hour time series of wind speed and wind gust measurements from select meteorological sites in the area, a 00:00 AM PST 12-hour and 2:00 PM and 7:00 PM PST 24-hour NOAA Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) back trajectories from monitoring sites in the area.

Based on the information described above, ICAPCD's Demonstration satisfies the narrative conceptual model criterion of the EER.

Table H.2: Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
May 11, 2018	Sections I and II	Sufficient	Yes

2. Not Reasonably Controllable or Preventable (nRCP)

High wind threshold

ICAPCD provided documentation showing that sustained wind speeds associated with the event were above the EPA's 25 mph high wind threshold on May 11, 2018. For example, maximum sustained wind speeds of 38 mph with gusts of 47 mph were measured at the El Centro NAF National Weather Service (NWS) station.

Identification of contributing sources

ICAPCD analysis shows satellite imagery and HYSPLIT back trajectories originating from the five PM_{10} monitoring sites in Imperial County and other monitoring sites in Riverside and Yuma counties.[173] The Demonstration states that "strong gusty westerly winds blew over open natural mountains and desert areas west of Imperial County [and] fugitive dust primarily affected all air quality monitors throughout the southeastern region."[174]

[172] Demonstration, Section II
[173] Demonstration, Section II
[174] Demonstration, Section II

Identification of reasonable controls

In Section V, ICAPCD provided detailed information on the current set of required controls in the Imperial County PM_{10} nonattainment area, including information on nonattainment status and a description and timeline of implementation of Regulation VIII, which includes Rules 800, 801, 802, 803, 804, 805, and 806. Regulation VIII was adopted by ICAPCD on October 16, 2012, and Rules 800, 804, 805 and 806 were approved by the EPA as Best Available Control Measure (BACM) level rules on April 22, 2013, with an effective date of May 22, 2013. Regulation VIII addresses the desert open areas managed by the Bureau of Land Management (BLM), U.S. Border Patrol, the California Department of Parks, and construction, open areas, track out, paved and unpaved roads, and agricultural operations.[175] ICAPCD also notes that "[b]oth permitted and non-permitted sources are required to comply with Regulation VIII requirements that address fugitive dust emissions."[176]

As identified above, the Demonstration states that the potential source area includes "open mountain ranges and surrounding open natural deserts within San Diego and Imperial Counties." This statement is supported by the HYSPLIT back trajectory analysis, which shows portions of the trajectories passing through the south and southeastern portions of San Diego County before continuing into Imperial County.[177] Based on a review of satellite imagery, this area appears to be predominately natural desert that transitions to mountainous terrain over 3000 ft in elevation. San Diego County is currently a PM_{10} attainment area with no federally required PM_{10} SIP control measures. San Diego County does have local control measures that reduce PM (including PM_{10}) from sources such as: Rule 50 Visible Emissions, Rule 51 Nuisance, Rule 52 Particulate Matter, Rule 54 Dust and Fumes, Rule 55 Fugitive Dust Control, and Rule 101 Burning Control.

Evidence of effective implementation and enforcement

ICAPCD provided information on source-permitted inspections and public complaints that occurred during the event and stated in the Demonstration that it evaluated inspection reports, air quality complaints, compliance reports, and other documentation and found no evidence of unusual anthropogenic-based PM_{10} emissions. ICAPCD received two complaints regarding dust on May 11, 2018, and stated that "[t]he complaints concerning dust were located in Calexico, the sole monitor that did not exceed…[and] [s]ince the location of the dust source was not upwind of the exceeding monitors, it had no impact on the exceedances at Brawley, El Centro, Niland, and Westmorland."[178]

Not reasonably preventable

While high wind dust events do not require a case-specific justification that the event was also not reasonably preventable,[179] ICAPCD's Demonstration discusses this criterion and states that "[t]he PM_{10} exceedance[s] measured at the Brawley, El Centro, Niland, and Westmorland

[175] Demonstration, Section V
[176] Demonstration, Section V
[177] Demonstration, Section II
[178] Demonstration, Section V
[179] 40 CFR part 50.14 (b)(5)(iv)

monitors were caused by naturally occurring strong gusty westerly winds that transported windblown dust into Imperial County and other parts of southern California from areas located within the Sonoran Desert regions to the west of Imperial County," and, therefore, a specific showing of the not reasonably preventable criterion is not required.[180]

EPA conclusion regarding nRCP criterion

Generally, State Implementation Plan (SIP) rules must be enforceable and must not relax existing requirements (see CAA sections 110(l) and 193). Rules implementing BACM and Best Available Control Technologies (BACT) are required in serious PM_{10} nonattainment areas (see CAA sections 189(a)(1) and 189(b)(1)). ICAPCD regulates a PM_{10} nonattainment area classified as serious (see 40 CFR part 81), so the applicable SIP should contain rules that implement BACM on contributing anthropogenic sources of windblown dust.

On July 8, 2010,[181] the EPA approved versions of the rules that comprise Regulation VIII, but required revisions to Rules 800, 804, 805, and 806. On April 22, 2013, the EPA fully approved these rule revisions into the California SIP. [182] The final rule also stated that the "EPA's preliminary view is that the Regulation VIII rules as revised in October 2012 constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the exceptional events rule, including reasonable and appropriate control measures on significant contributing anthropogenic sources."[183] The most recent BACM determinations for the rules are not within five years of the date of the event, but the EPA considers the controls to continue to constitute reasonable controls based on our review of analogous rules in other PM_{10} nonattainment areas and because the latest available emissions inventory information indicates that the significant source categories remain the same in Imperial County as they were when the BACM determinations were last made.[184]

The EPA also considers the control measures in place in San Diego County to be reasonable controls for this event based on San Diego's PM_{10} attainment status and the back-trajectory analysis showing the trajectory passing through a portion of San Diego County that appears to be predominately natural desert and mountainous areas with few sources of anthropogenic windblown dust. Therefore, the EPA is satisfied that the nRCP criterion of the EER is met.

Table H.3: Documentation of nRCP

Exceedance Date	**Demonstration Citation**	**Quality of Evidence**	**Criterion Met?**
May 11, 2018	Section II, V, and VI	Sufficient	Yes

[180] Demonstration, Section VI
[181] 75 FR 39366
[182] 78 FR 23677
[183] 78 FR 23682
[184] TSD Addendum (December 2019); CARB, CEPAM: 2016 SIP – Standard Emission Tool, Emissions Projections for Imperial County, December 5, 2019.

3. Clear Causal Relationship (CCR)

Comparison with historical concentrations

In Section IV of the Demonstration, ICAPCD included a comparison with historical concentrations, as required by 40 CFR §50.14(c)(3)(iv)(C). In the Demonstration, ICAPCD compared the event-related PM_{10} concentrations with concentrations from 2010-2018 by highlighting the event day compared to routine data throughout the year and the season in which the exceedances occurred (April – June). The analysis also showed that the 24-hour PM_{10} concentrations on the exceedance day were "outside the normal concentration levels when comparing to similar event days and non-event days."[185]

Evidence of transport of high wind dust emissions from the source area to the monitor

In addition to analyses presented in Sections I and II, Section III of the Demonstration included: a "ramp-up" analysis of the event data that showed satellite imagery, general wind speed, gust, and direction in the upwind areas, a NOAA surface analysis, locations of NWS advisories, and hourly PM_{10} concentrations measured at monitoring sites in Imperial County; a 72-hour time series of PM_{10} concentrations measured at monitoring sites in Imperial County and visibility from regional NWS stations; a table of wind speed, gust, and direction measurements at selected meteorological sites in the area and PM_{10} concentrations from monitoring sites in Imperial County, and Air Quality Index (AQI) information.

Appendix A of the Demonstration included NWS urgent weather messages and advisories. Consistent with the discussion in Sections I, II, and III of the Demonstration, NWS Phoenix, AZ issued a wind advisory for southwest Imperial County, southeast Imperial County, west Imperial County and Imperial Valley at 4:02 AM MST on May 10, 2018, which was in effect from 12:00 PM MST on May 11, 2018, until 8:00 AM MST on May 12, 2018, and stated that "[s]outhwest winds 20 to 35 mph with gusts over 50 mph...[and] [g]usty winds may generate areas of dense blowing dust."[186]

NWS San Diego, CA issued a wind advisory for San Diego County mountains and deserts at 6:33 AM PDT on May 10, 2018, which was in effect from 10:00 AM PDT on May 11, 2018 until 5:00 AM PDT on May 12, 2018 and stated that "[w]inds are gusting 30-35 mph across the high desert…[and] patchy blowing dust limiting visibility is possible."[187]

Appendix B of the Demonstration included Quality Controlled Local Climatological Data for NWS airport sites in Imperial, Riverside, San Diego and Yuma counties. These data show the weather type of haze (HZ) observed at 22:13 hours on May 11, 2018, at the El Centro NAF NWS station, and HZ from 20:53 to 21:53 hours on May 11, 2018, at the Imperial County Airport NWS station.

[185] Demonstration, Section IV
[186] Demonstration, Appendix A
[187] Demonstration, Appendix A

Appendix C of the Demonstration included a map of NWS public service zones, Imperial County web posting of elevated PM concentrations for May 10, 2018, weather story information from the San Diego, CA and Phoenix, AZ NWS offices, AQI information, the Imperial County No Burn Day determination for May 11, 2018, and the public comment notice (affidavit).

In the Demonstration, ICAPCD concluded that "high gusty westerly winds transported fugitive emissions from open natural Mountain and desert areas, located within San Diego County and Imperial County (all part of the Sonoran Desert)."[188]

EPA conclusion regarding CCR criterion

The analyses included in the Demonstration, specifically, the evaluation of several years of PM_{10} monitoring data, numerous time-series graphs and tables of wind speed, wind gusts, wind direction, and hourly PM_{10} concentrations throughout Imperial County, the "ramp-up" analysis, NOAA HYSPLIT back trajectory analysis, NWS station reports of haze, and the issuance of NWS wind advisories sufficiently demonstrate that high wind speeds in upwind areas caused emissions from natural desert areas and reasonably controlled local anthropogenic sources to the west of Brawley, El Centro, Niland and Westmorland, which were transported to Brawley, El Centro, Niland and Westmorland and caused exceedances of the 24-hour PM_{10} NAAQS. Therefore, the Demonstration shows a clear causal relationship between the high wind dust event emissions and the exceedances measured at Brawley, El Centro, Niland and Westmorland.

Table H.4: Documentation of CCR

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
May 11, 2018	Section I, II, III, IV, VI Appendices A, B, and C	Sufficient	Yes

4. Natural Event

ICAPCD stated in the Demonstration that "the PM_{10} exceedance[s] that occurred at the Brawley, El Centro, Niland, and Westmorland monitors on May 11, 2018… [were] caused by the transport of windblown dust into Imperial County by strong westerly winds associated with an upper level low-pressure system that passed through the region…[and] [a]t the time of the event, anthropogenic sources, within Imperial County were reasonably controlled with BACM…[and] [t]he event therefore qualifies as a natural event,"[189] and provided evidence that the emissions originated from natural desert areas located to the southwest of Brawley, El Centro, Niland and Westmorland in Imperial and San Diego counties and that reasonable controls on contributing anthropogenic sources were in place at the time of the event.

Natural event conclusion

The CCR and nRCP analyses demonstrate that event-related emissions of windblown dust were from natural undisturbed lands and that upwind anthropogenic sources were subject to

[188] Demonstration, Section VI
[189] Demonstration, Section VI

reasonable controls at the time of the event. Therefore, the EPA is satisfied that the high wind dust event met the definition of a natural event.

Table H.5: Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
May 11, 2018	Section I, II, III, IV, V, VI	Sufficient	Yes

5. Schedule and Procedural Requirements

In addition to technical Demonstration requirements, 40 CFR §50.14(c) and 40 CFR §51.930 specify schedule and procedural requirements an air agency must follow to request data exclusion. Table H.6 outlines the EPA's evaluation of these requirements.

Table H.6: Schedules and Procedural Criteria

Criterion	Reference	Demonstration Citation	Criterion Met?
Did the agency provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Sufficient	Yes
Did the agency submit an Initial Notification of Potential Exceptional Event and flag the affected data in the EPA's Air Quality System (AQS)?	40 CFR §50.14 (c)(2)(i)	Sufficient	Yes
If applicable, did the initial notification and demonstration submittals meet the deadlines for data influenced by exceptional events for use in initial area designations? Or the deadlines established by the EPA during the Initial Notification of Potential Exceptional Events process, if applicable?	40 CFR §50.14 Table 2 40 CFR §50.14 (c)(2)(i)(B)	Sufficient	Yes
Was the public comment process followed and documented? • Did the agency document that the comment period was open for a minimum of 30 days? • Did the agency submit to the EPA any public comments received? • Did the state address comments disputing or contradicting factual evidence provided in the demonstration?	40 CFR §50.14 (c)(3)(v)	Sufficient	Yes
Has the agency met requirements regarding submission of a mitigation plan, if applicable?	40 CFR §51.930 (b)	NA	NA

6. Conclusion

The EPA has reviewed the documentation provided by CARB and ICAPCD to support the conclusion that a high wind dust event caused exceedances of the 24-hour PM_{10} NAAQS at Brawley, El Centro, Niland and Westmorland on May 11, 2018. The EPA has determined that the flagged exceedances at these monitoring stations on this day meet the definition of an exceptional event: the high wind dust event affected air quality in such a way that there exists a clear causal relationship between the event and the monitored exceedances, was not reasonably preventable or controllable, and meets the definition of a natural event. The EPA has also determined that CARB and ICAPCD have satisfied the schedule and procedural requirements for data exclusion.

I. Event Day: May 25, 2018

Table I.1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m³)
May 25, 2018	Calexico	06-025-0005-3	156
May 25, 2018	Brawley	06-025-0007-3	159

1. Narrative Conceptual Model

Sections I and II of the Demonstration provided a narrative conceptual model of the event and included characteristics of Imperial County, such as general description of the geography, topography, and meteorology, and a description and map of the ambient air quality monitoring network and meteorological sites (see Figure I.1).

Figure I.1: Monitoring Sites in Imperial County[190]

Sections I and II of the Demonstration further described the event-specific characteristics and included ICAPCD's conclusion that the exceedances measured at the Brawley and Calexico monitoring stations (Brawley, Calexico) was caused by "a forecasted low-pressure system [that]

[190] Demonstration, Section I

moved inland from the Pacific coast into California…[and] [t]he strong gusty westerly winds ahead of the system generated emissions from within the open mountain ranges and surrounding open natural deserts within San Diego and Imperial counties…[and] [t]hese windblown dust emissions were transported to all the Imperial County regional air quality monitors,"[191] and that the exceedances qualify as an exceptional event under the EER. ICAPCD summarized the event and included a table of hourly PM_{10} concentrations measured on May 24-26, 2018 at monitoring sites in Riverside, Imperial and Yuma counties, a 72-hour time-series of PM_{10} concentration profiles for monitoring sites in the area, two 72-hour time series of wind speed and wind gust measurements from select meteorological sites in the area, and 12:00 PM and 5:00 PM PST 12-hour NOAA Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) back trajectories from monitoring sites in the area.

Based on the information described above, ICAPCD's Demonstration satisfies the narrative conceptual model criterion of the EER.

Table I.2: Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
May 25, 2018	Sections I and II	Sufficient	Yes

2. Not Reasonably Controllable or Preventable (nRCP)

High wind threshold

ICAPCD provided documentation showing that sustained wind speeds associated with the event were above the EPA's 25 mph high wind threshold on May 25, 2018. For example, maximum sustained wind speeds of 44 mph with gusts of 54 mph were measured at the El Centro NAF National Weather Service (NWS) station.

Identification of contributing sources

ICAPCD analysis shows satellite imagery and HYSPLIT back trajectories originating from the five PM_{10} monitoring sites in Imperial County and other monitoring sites in Riverside and Yuma counties.[192] The Demonstration states that "strong gusty westerly winds blew [over] open natural mountains and desert areas west of Imperial County."[193]

Identification of reasonable controls

In Section V, ICAPCD provided detailed information on the current set of required controls in the Imperial County PM_{10} nonattainment area, including information on nonattainment status and a description and timeline of implementation of Regulation VIII, which includes Rules 800, 801, 802, 803, 804, 805, and 806. Regulation VIII was adopted by ICAPCD on October 16, 2012, and

[191] Demonstration, Section II
[192] Demonstration, Section II
[193] Demonstration, Section II

Rules 800, 804, 805 and 806 were approved by the EPA as Best Available Control Measure (BACM) level rules on April 22, 2013, with an effective date of May 22, 2013. Regulation VIII addresses the desert open areas managed by the Bureau of Land Management (BLM), U.S. Border Patrol, the California Department of Parks, and construction, open areas, track out, paved and unpaved roads, and agricultural operations.[194] ICAPCD also notes that "[b]oth permitted and non-permitted sources are required to comply with Regulation VIII requirements that address fugitive dust emissions."[195]

As identified above, the Demonstration states that the potential source area includes "open natural mountains and desert areas west of Imperial County."[196] This statement is supported by the HYSPLIT back trajectory analysis, which shows the trajectories passing through San Diego County and Mexico before continuing into Imperial County.[197] Based on a review of satellite imagery, this area appears to be predominately natural desert that transitions to mountainous terrain over 3000 ft in elevation. San Diego County is currently a PM_{10} attainment area with no federally required PM_{10} SIP control measures. San Diego County does have local control measures that reduce PM (including PM_{10}) from sources such as: Rule 50 Visible Emissions, Rule 51 Nuisance, Rule 52 Particulate Matter, Rule 54 Dust and Fumes, Rule 55 Fugitive Dust Control, and Rule 101 Burning Control. An assessment of reasonable controls in Mexico is not required, as sources in Mexico are not within ICAPCD's or CARB's jurisdictional boundaries.[198]

Evidence of effective implementation and enforcement

ICAPCD provided information on source-permitted inspections and public complaints that occurred during the event and stated in the Demonstration that it evaluated inspection reports, air quality complaints, compliance reports, and other documentation and found no evidence of unusual anthropogenic-based PM_{10} emissions on May 25, 2018, officially declared as a No Burn Day, related to agricultural burning, waste burning or dust. [199]

Not reasonably preventable

While high wind dust events do not require a case-specific justification that the event was also not reasonably preventable,[200] ICAPCD's Demonstration discusses this criterion and states that "[t]he PM_{10} exceedance[s] measured at the Brawley and Calexico monitors were caused by naturally occurring strong gusty westerly winds that transported windblown dust into Imperial County and other parts of southern California from areas located within the Sonoran Desert regions to the west of Imperial County," and, therefore, a specific showing of the not reasonably preventable criterion is not required.[201]

[194] Demonstration, Section V
[195] Demonstration, Section V
[196] Demonstration, Section II
[197] Demonstration, Section II
[198] 40 CFR part 50.14 (b)(8)(vii)
[199] Demonstration, Section V
[200] 40 CFR part 50.14 (b)(5)(iv)
[201] Demonstration, Section VI

EPA conclusion regarding nRCP criterion

Generally, State Implementation Plan (SIP) rules must be enforceable and must not relax existing requirements (see CAA sections 110(l) and 193). Rules implementing BACM and Best Available Control Technologies (BACT) are required in serious PM_{10} nonattainment areas (see CAA sections 189(a)(1) and 189(b)(1)). ICAPCD regulates a PM_{10} nonattainment area classified as serious (see 40 CFR part 81), so the applicable SIP should contain rules that implement BACM on contributing anthropogenic sources of windblown dust.

On July 8, 2010,[202] the EPA approved versions of the rules that comprise Regulation VIII, but required revisions to Rules 800, 804, 805, and 806. On April 22, 2013, the EPA fully approved these rule revisions into the California SIP. [203] The final rule also stated that the "EPA's preliminary view is that the Regulation VIII rules as revised in October 2012 constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the exceptional events rule, including reasonable and appropriate control measures on significant contributing anthropogenic sources."[204] The most recent BACM determinations for the rules are not within five years of the date of the event, but the EPA considers the controls to continue to constitute reasonable controls based on our review of analogous rules in other PM_{10} nonattainment areas and because the latest available emissions inventory information indicates that the significant source categories remain the same in Imperial County as they were when the BACM determinations were last made.[205]

The EPA also considers the control measures in place in San Diego County to be reasonable controls for this event based on San Diego's PM_{10} attainment status and the back-trajectory analysis showing the trajectory passing through the southeastern portion of San Diego County that appears to be predominately natural desert and mountainous areas with few sources of anthropogenic windblown dust. Therefore, the EPA is satisfied that the nRCP criterion of the EER is met.

Table I.3: Documentation of nRCP

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
May 25, 2018	Section II, V, and VI	Sufficient	Yes

3. Clear Causal Relationship (CCR)

Comparison with historical concentrations

In Section IV of the Demonstration, ICAPCD included a comparison with historical concentrations, as required by 40 CFR §50.14(c)(3)(iv)(C). In the Demonstration, ICAPCD

[202] 75 FR 39366
[203] 78 FR 23677
[204] 78 FR 23682
[205] TSD Addendum (December 2019); CARB, CEPAM: 2016 SIP – Standard Emission Tool, Emissions Projections for Riverside County, December 5, 2019.

compared the event-related PM_{10} concentrations with concentrations from 2010-2018 by highlighting the event day compared to routine data throughout the year and the season in which the exceedances occurred (April – June). The analysis also showed that the 24-hour PM_{10} concentrations on the exceedance day were "clearly outside the normal concentration levels when comparing to similar event days and non-event days."[206]

Evidence of transport of high wind dust emissions from the source area to the monitor

In addition to analyses presented in Sections I and II, Section III of the Demonstration included: a "ramp-up" analysis of the event data that showed satellite imagery, general wind speed, gust, and direction in the upwind areas, and hourly PM_{10} concentrations measured at Imperial County monitoring stations, including Brawley and Calexico; a 72-hour time series of PM_{10} concentrations measured at monitoring sites in Imperial County and visibility from Imperial County Airport and El Centro NAF NWS stations; tables of wind speed, gust, and direction measurements at selected meteorological sites in the area and PM_{10} concentrations from monitoring sites in Imperial County, and Air Quality Index (AQI) information.

Appendix A of the Demonstration included NWS urgent weather messages and advisories. Consistent with the discussion in Sections I, II, and III of the Demonstration, NWS San Diego, CA issued a forecast discussion for the San Diego Mountains and desert areas at 3:33 AM PDT on May 24, 2018, and stated that "[a] low pressure system off the California coast will move slowly inland for tonight through Saturday…[and] [t]his will maintain onshore flow...strongest for Friday and Saturday with periods of stronger and gusty southwest to west winds in the mountains and deserts from Friday afternoon into Saturday evening."[207] NWS Phoenix, AZ issued a forecast discussion for southeast California at 2:06 PM MST on May 25, 2018, and stated that "winds across southeast California will likely be high enough to agitate surface sand/dust and create areas of reduced visibility."[208]

Appendix B of the Demonstration included Quality Controlled Local Climatological Data for NWS airport sites in Imperial, Riverside, San Diego and Yuma counties. These data show the weather type of haze (HZ) observed at 22:07 hours at the Imperial County Airport NWS station on May 25, 2018.

Appendix C of the Demonstration included a map of public zones serviced by the NWS Phoenix and San Diego offices, Imperial County web postings of potential elevated PM concentrations on May 23-25, 2018, weather story information from the San Diego and Phoenix NWS offices, a NOAA smoke text product, Air Quality Index information, the Imperial County No Burn Day determination for May 25, 2018, and the public comment notice (affidavit).

In the Demonstration, ICAPCD concluded that "high gusty westerly winds transported fugitive emissions from open natural Mountain and desert areas, located within San Diego County and Imperial County (all part of the Sonoran Desert)."[209]

[206] Demonstration, Section IV
[207] Demonstration, Appendix A
[208] Demonstration, Appendix A
[209] Demonstration, Section VI

EPA conclusion regarding CCR criterion

The analyses included in the Demonstration, specifically, the evaluation of several years of PM_{10} monitoring data, numerous time-series graphs and tables of wind speed, wind gusts, wind direction, and hourly PM_{10} concentrations throughout Imperial County, the "ramp-up" analysis, NOAA HYSPLIT back trajectory analysis, and a NWS station report of haze sufficiently demonstrate that high wind speeds in upwind areas caused emissions from open natural mountain and desert areas and reasonably controlled local anthropogenic sources to the west of Brawley and Calexico, which were transported to Brawley and Calexico and caused an exceedance of the 24-hour PM_{10} NAAQS. Therefore, the Demonstration shows a clear causal relationship between the high wind dust event emissions and the exceedances measured at Brawley and Calexico.

Table I.4: Documentation of CCR

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
May 25, 2018	Section I, II, III, IV, VI Appendices A, B, and C	Sufficient	Yes

4. Natural Event

ICAPCD stated in the Demonstration that "[t]he PM_{10} exceedance[s] that occurred at the Brawley and Calexico monitors on May 25, 2018, were caused by the transport of windblown dust into Imperial County by strong gusty westerly winds associated with a low-pressure system that passed through the region…[and] [a]t the time of the event, anthropogenic sources, within Imperial County were reasonably controlled…[and] [t]he event therefore qualifies as a natural event,"[210] and provided evidence that the emissions originated from open natural mountains and desert areas west of Brawley and Calexico in Imperial and San Diego counties and that reasonable controls on contributing anthropogenic sources were in place at the time of the event.

Natural event conclusion

The CCR and nRCP analyses demonstrate that event-related emissions of windblown dust were from natural undisturbed lands and that upwind anthropogenic sources were subject to reasonable controls at the time of the event. Therefore, the EPA is satisfied that the high wind dust event met the definition of a natural event.

Table I.5: Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
May 25, 2018	Section I, II, III, IV, V, VI	Sufficient	Yes

[210] Demonstration, Section VI

5. Schedule and Procedural Requirements

In addition to technical Demonstration requirements, 40 CFR §50.14(c) and 40 CFR §51.930 specify schedule and procedural requirements an air agency must follow to request data exclusion. Table I.6 outlines the EPA's evaluation of these requirements.

Table I.6: Schedules and Procedural Criteria

Criterion	Reference	Demonstration Citation	Criterion Met?
Did the agency provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Sufficient	Yes
Did the agency submit an Initial Notification of Potential Exceptional Event and flag the affected data in the EPA's Air Quality System (AQS)?	40 CFR §50.14 (c)(2)(i)	Sufficient	Yes
If applicable, did the initial notification and demonstration submittals meet the deadlines for data influenced by exceptional events for use in initial area designations? Or the deadlines established by the EPA during the Initial Notification of Potential Exceptional Events process, if applicable?	40 CFR §50.14 Table 2 40 CFR §50.14 (c)(2)(i)(B)	Sufficient	Yes
Was the public comment process followed and documented? • Did the agency document that the comment period was open for a minimum of 30 days? • Did the agency submit to the EPA any public comments received? • Did the state address comments disputing or contradicting factual evidence provided in the demonstration?	40 CFR §50.14 (c)(3)(v)	Sufficient	Yes
Has the agency met requirements regarding submission of a mitigation plan, if applicable?	40 CFR §51.930 (b)	NA	NA

6. Conclusion

The EPA has reviewed the documentation provided by CARB and ICAPCD to support the conclusion that a high wind dust event caused exceedances of the 24-hour PM_{10} NAAQS at Brawley and Calexico on May 25, 2018. The EPA has determined that the flagged exceedances at these monitoring stations on this day meet the definition of an exceptional event: the high wind dust event affected air quality in such a way that there exists a clear causal relationship between the event and the monitored exceedances, was not reasonably preventable or

controllable, and meets the definition of a natural event. The EPA has also determined that CARB and ICAPCD have satisfied the schedule and procedural requirements for data exclusion.

J. Event Day: June 17, 2018

Table J.1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m³)
June 17, 2018	Brawley	06-025-0007-3	168

1. Narrative Conceptual Model

Sections I and II of the Demonstration provided a narrative conceptual model of the event and included characteristics of Imperial County, such as general description of the geography, topography, and meteorology, and a description and map of the ambient air quality monitoring network and meteorological sites (see Figure J.1).

Figure J.1: Monitoring Sites in Imperial County[211]

Sections I and II of the Demonstration further described the event-specific characteristics and included ICAPCD's conclusion that the exceedance measured at the Brawley monitoring station (Brawley) was caused by "a forecasted low-pressure system [that] moved inland from the Pacific coast over California and tightened the surface pressure gradient that produced strong and gusty

[211] Demonstration, Section I

westerly winds across southeastern California…[and] [t]he strong gusty westerly winds associated with the system generated emissions from within the open mountain ranges and surrounding open natural deserts within San Diego and Imperial Counties…[and] these windblown dust emissions were transported to all the Imperial County regional air quality monitors,"[212] and that the exceedance qualifies as an exceptional event under the EER. ICAPCD summarized the event and included a table of hourly PM_{10} concentrations measured on June 16-18, 2018 at monitoring sites in Riverside, Imperial and Yuma counties, a 72-hour time-series of PM_{10} concentration profiles for monitoring sites in the area, two 72-hour time series of wind speed and wind gust measurements from select meteorological sites in the area, and 1:00 PM PST and 4:00 PM PST 12-hour NOAA Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) back trajectories from monitoring sites in the area.

Based on the information described above, ICAPCD's Demonstration satisfies the narrative conceptual model criterion of the EER.

Table J.2: Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
June 17, 2018	Sections I and II	Sufficient	Yes

2. Not Reasonably Controllable or Preventable (nRCP)

High wind threshold

ICAPCD provided documentation showing that sustained wind speeds associated with the event were above the EPA's 25 mph high wind threshold on June 17, 2018. For example, maximum sustained wind speeds of 37 mph with gusts of 43 mph were measured at the El Centro NAF National Weather Service (NWS) station.

Identification of contributing sources

ICAPCD analysis shows satellite imagery and HYSPLIT back trajectories originating from the five PM_{10} monitoring sites in Imperial County and other monitoring sites in Riverside and Yuma counties.[213] The Demonstration states that "gusty westerly winds blew over open natural desert areas west of Imperial County."[214]

Identification of reasonable controls

In Section V, ICAPCD provided detailed information on the current set of required controls in the Imperial County PM_{10} nonattainment area, including information on nonattainment status and a description and timeline of implementation of Regulation VIII, which includes Rules 800, 801, 802, 803, 804, 805, and 806. Regulation VIII was adopted by ICAPCD on October 16, 2012, and

[212] Demonstration, Section II
[213] Demonstration, Section II
[214] Demonstration, Section II

Rules 800, 804, 805 and 806 were approved by the EPA as Best Available Control Measure (BACM) level rules on April 22, 2013, with an effective date of May 22, 2013. Regulation VIII addresses the desert open areas managed by the Bureau of Land Management (BLM), U.S. Border Patrol, the California Department of Parks, and construction, open areas, track out, paved and unpaved roads, and agricultural operations.[215] ICAPCD also notes that "[b]oth permitted and non-permitted sources are required to comply with Regulation VIII requirements that address fugitive dust emissions."[216]

As identified above, the Demonstration states that the potential source area includes "open natural desert areas west of Imperial County."[217] This statement is supported by the HYSPLIT back trajectory analysis, which shows the trajectories passing through the southeastern portion of San Diego County before continuing into Imperial County.[218] Based on a review of satellite imagery, this area appears to be predominately natural desert that transitions to mountainous terrain over 3000 ft in elevation. San Diego County is currently a PM_{10} attainment area with no federally required PM_{10} SIP control measures. San Diego County does have local control measures that reduce PM (including PM_{10}) from sources such as: Rule 50 Visible Emissions, Rule 51 Nuisance, Rule 52 Particulate Matter, Rule 54 Dust and Fumes, Rule 55 Fugitive Dust Control, and Rule 101 Burning Control.

Evidence of effective implementation and enforcement

ICAPCD provided information on source-permitted inspections and public complaints that occurred during the event and stated in the Demonstration that it evaluated inspection reports, air quality complaints, compliance reports, and other documentation and found no evidence of unusual anthropogenic-based PM_{10} emissions on June 17, 2018, officially declared as a No Burn Day, related to agricultural burning, waste burning or dust.[219]

Not reasonably preventable

While high wind dust events do not require a case-specific justification that the event was also not reasonably preventable,[220] ICAPCD's Demonstration discusses this criterion and states that "the PM_{10} exceedances [sic] measured at the Brawley monitor was caused by naturally occuring strong gusty westerly winds that transported windblown dust into Imperial County and other parts of southern California from areas located within the Sonoran Desert regions to the southwest and west of Imperial County," and, therefore, a specific showing of the not reasonably preventable criterion is not required.[221]

[215] Demonstration, Section V
[216] Demonstration, Section V
[217] Demonstration, Section II
[218] Demonstration, Section II
[219] Demonstration, Section V
[220] 40 CFR part 50.14 (b)(5)(iv)
[221] Demonstration, Section VI

EPA conclusion regarding nRCP criterion

Generally, State Implementation Plan (SIP) rules must be enforceable and must not relax existing requirements (see CAA sections 110(l) and 193). Rules implementing BACM and Best Available Control Technologies (BACT) are required in serious PM_{10} nonattainment areas (see CAA sections 189(a)(1) and 189(b)(1)). ICAPCD regulates a PM_{10} nonattainment area classified as serious (see 40 CFR part 81), so the applicable SIP should contain rules that implement BACM on contributing anthropogenic sources of windblown dust.

On July 8, 2010,[222] the EPA approved versions of the rules that comprise Regulation VIII, but required revisions to Rules 800, 804, 805, and 806. On April 22, 2013, the EPA fully approved these rule revisions into the California SIP. [223] The final rule also stated that the "EPA's preliminary view is that the Regulation VIII rules as revised in October 2012 constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the exceptional events rule, including reasonable and appropriate control measures on significant contributing anthropogenic sources."[224] The most recent BACM determinations for the rules are not within five years of the date of the event, but the EPA considers the controls to continue to constitute reasonable controls based on our review of analogous rules in other PM_{10} nonattainment areas and because the latest available emissions inventory information indicates that the significant source categories remain the same in Imperial County as they were when the BACM determinations were last made.[225]

The EPA also considers the control measures in place in San Diego County to be reasonable controls for this event based on San Diego's PM_{10} attainment status and the back-trajectory analysis showing the trajectory passing through a portion of San Diego County that appears to be predominately natural desert and mountainous areas with few sources of anthropogenic windblown dust. Therefore, the EPA is satisfied that the nRCP criterion of the EER is met.

Table J.3: Documentation of nRCP

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
June 17, 2018	Section II, V, and VI	Sufficient	Yes

3. Clear Causal Relationship (CCR)

Comparison with historical concentrations

In Section IV of the Demonstration, ICAPCD included a comparison with historical concentrations, as required by 40 CFR §50.14(c)(3)(iv)(C). In the Demonstration, ICAPCD compared the event-related PM_{10} concentrations with concentrations from 2010-2018 by

[222] 75 FR 39366
[223] 78 FR 23677
[224] 78 FR 23682
[225] TSD Addendum (December 2019); CARB, CEPAM: 2016 SIP – Standard Emission Tool, Emissions Projections for Imperial County, December 5, 2019.

highlighting the event day compared to routine data throughout the year and the season in which the exceedance occurred (April – June). The analysis also showed that the 24-hour PM_{10} concentration on the exceedance day was "clearly outside the normal concentration levels when comparing to similar event days and non-event days."[226]

Evidence of transport of high wind dust emissions from the source area to the monitor

In addition to analyses presented in Sections I and II, Section III of the Demonstration included: a "ramp-up" analysis of the event data that showed satellite imagery, general wind speed, gust, and direction in the upwind areas, and hourly PM_{10} concentrations measured at Imperial County monitoring sites, including Brawley; a 72-hour time series of PM_{10} concentrations measured at monitoring sites in Imperial County and visibility from regional NWS stations; tables of wind speed, gust, and direction measurements at selected meteorological sites in the area and PM_{10} concentrations from monitoring sites in Imperial County, and Air Quality Index (AQI) information for Brawley.

Appendix A of the Demonstration included NWS urgent weather messages and advisories. Consistent with the discussion in Sections I, II, and III of the Demonstration, NWS San Diego, CA issued a forecast discussion for mountain and deserts at 9:06 PM PDT on July 16, 2018 and stated that "onshore flow has increased, pushing strong winds in the mountains and deserts this evening with a few spots gusting over 40 mph…[and] winds through mountain passes and adjacent deserts are expected late Sunday."[227] NWS San Diego, CA also issued a forecast discussion for mountain and deserts at 9:13 PM PDT on July 17, 2018, and stated that "[t]here were some strong wind gusts over 50 mph in isolated parts of the mountains and deserts, and stirred up some dust in Imperial County."[228]

Appendix B of the Demonstration included Quality Controlled Local Climatological Data for NWS airport sites in Imperial, Riverside, San Diego and Yuma counties. These data show the weather type of haze (HZ) at 14:53 and 17:53 hours at Imperial County Airport NWS station on June 17, 2018.

Appendix C of the Demonstration included a map of public zones serviced by the NWS Phoenix and San Diego offices, Imperial County web postings of potential elevated PM concentrations on June 14-18, 2018, weather story information from the San Diego and Phoenix NWS offices, NOAA Smoke Text product describing blowing dust observed off the Salton Sean [sic] and Twentynine Palms, AQI information, the Imperial County No Burn Day determination for June 17, 2018, and the public comment notice (affidavit).

In the Demonstration, ICAPCD concluded that "high gusty westerly winds transported fugitive emissions from open natural Mountain and desert areas, located within San Diego County and Imperial County (all part of the Sonoran Desert)."[229]

[226] Demonstration, Section IV
[227] Demonstration, Appendix A
[228] Demonstration, Appendix A
[229] Demonstration, Section VI

EPA conclusion regarding CCR criterion

The analyses included in the Demonstration, specifically, the evaluation of several years of PM_{10} monitoring data, numerous time-series graphs and tables of wind speed, wind gusts, wind direction, and hourly PM_{10} concentrations throughout Imperial County, the "ramp-up" analysis, NOAA HYSPLIT back trajectory analysis, and a NWS station report of haze sufficiently demonstrate that high wind speeds in upwind areas caused emissions from open natural desert areas west of Imperial County and reasonably controlled local anthropogenic sources to the southwest of Brawley, which were transported to Brawley and caused an exceedance of the 24-hour PM_{10} NAAQS. Therefore, the Demonstration shows a clear causal relationship between the high wind dust event emissions and the exceedances measured at Brawley.

Table J.4: Documentation of CCR

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
June 17, 2018	Section I, II, III, IV, VI Appendices A, B, and C	Sufficient	Yes

4. Natural Event

ICAPCD stated in the Demonstration that "[t]he PM_{10} exceedance that occurred at the Brawley monitor on June 17, 2018, was caused by the transport of windblown dust into Imperial County by strong gusty westerly winds associated with a large low-pressure system that passed through the region…[and] [a]t the time of the event, anthropogenic sources, within Imperial County were reasonably controlled…[and] [t]he event therefore qualifies as a natural event,"[230] and provided evidence that the emissions originated from open natural desert areas west of Brawley in Imperial and San Diego counties and that reasonable controls on contributing anthropogenic sources were in place at the time of the event.

Natural event conclusion

The CCR and nRCP analyses demonstrate that event-related emissions of windblown dust were from natural undisturbed lands and that upwind anthropogenic sources were subject to reasonable controls at the time of the event. Therefore, the EPA is satisfied that the high wind dust event met the definition of a natural event.

Table J.5: Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
June 17, 2018	Section I, II, III, IV, V, VI	Sufficient	Yes

5. Schedule and Procedural Requirements

In addition to technical Demonstration requirements, 40 CFR §50.14(c) and 40 CFR §51.930 specify schedule and procedural requirements an air agency must follow to request data

[230] Demonstration, Section VI

exclusion. Table J.6 outlines the EPA's evaluation of these requirements.

Table J.6: Schedules and Procedural Criteria

Criterion	Reference	Demonstration Citation	Criterion Met?
Did the agency provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Sufficient	Yes
Did the agency submit an Initial Notification of Potential Exceptional Event and flag the affected data in the EPA's Air Quality System (AQS)?	40 CFR §50.14 (c)(2)(i)	Sufficient	Yes
If applicable, did the initial notification and demonstration submittals meet the deadlines for data influenced by exceptional events for use in initial area designations? Or the deadlines established by the EPA during the Initial Notification of Potential Exceptional Events process, if applicable?	40 CFR §50.14 Table 2 40 CFR §50.14 (c)(2)(i)(B)	Sufficient	Yes
Was the public comment process followed and documented? • Did the agency document that the comment period was open for a minimum of 30 days? • Did the agency submit to the EPA any public comments received? • Did the state address comments disputing or contradicting factual evidence provided in the demonstration?	40 CFR §50.14 (c)(3)(v)	Sufficient	Yes
Has the agency met requirements regarding submission of a mitigation plan, if applicable?	40 CFR §51.930 (b)	NA	NA

6. Conclusion

The EPA has reviewed the documentation provided by CARB and ICAPCD to support the conclusion that a high wind dust event caused an exceedance of the 24-hour PM_{10} NAAQS at Brawley on June 17, 2018. The EPA has determined that the flagged exceedance at this monitoring station on this day meets the definition of an exceptional event: the high wind dust event affected air quality in such a way that there exists a clear causal relationship between the event and the monitored exceedance, was not reasonably preventable or controllable, and meets the definition of a natural event. The EPA has also determined that CARB and ICAPCD have satisfied the schedule and procedural requirements for data exclusion.

K. Event Day: June 23, 2018

Table K.1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m³)
June 23, 2018	Niland	06-025-4004-3	163

1. Narrative Conceptual Model

Sections I and II of the Demonstration provided a narrative conceptual model of the event and included characteristics of Imperial County, such as general description of the geography, topography, and meteorology, and a description and map of the ambient air quality monitoring network and meteorological sites (see Figure K.1).

Figure K.1: Monitoring Sites in Imperial County[231]

Sections I and II of the Demonstration further described the event-specific characteristics and included ICAPCD's conclusion that the exceedance measured at the Niland monitoring station (Niland) was caused by "a surge of monsoonal air [that] moved into southeast California and southwestern Arizona causing gusty southerly outflow winds to affect the region [and] [t]hese

[231] Demonstration, Section I

gusty southerly outflow winds generated emissions from within the natural open desert areas within northern Mexico and the surrounding open natural deserts within Imperial County,"[232] and that the exceedance qualifies as an exceptional event under the EER. ICAPCD summarized the event and included a table of hourly PM_{10} concentrations measured on June 22-24, 2018 at monitoring sites in Riverside, Imperial and Yuma counties, a 72-hour time-series of PM_{10} concentration profiles for monitoring sites in the area, two 72-hour time series of wind speed and wind gust measurements from select meteorological sites in the area, and 9:00 AM and 11:00 AM PST 12-hour NOAA Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) back trajectories from monitoring sites in the area.

Based on the information described above, ICAPCD's Demonstration satisfies the narrative conceptual model criterion of the EER.

Table K.2: Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
June 23, 2018	Sections I and II	Sufficient	Yes

2. Not Reasonably Controllable or Preventable (nRCP)

High wind threshold

ICAPCD provided documentation showing that sustained wind speeds associated with the event were above the EPA's 25 mph high wind threshold on June 23, 2018. For example, maximum sustained wind speeds of 25 mph with gusts of 34 mph were measured at the Yuma MCAS National Weather Service (NWS) station and maximum sustained wind speeds of 31 mph with gusts of 37 mph were measured at the Yuma Auxiliary Airfield (NWS) station.

Identification of contributing sources

ICAPCD analysis shows satellite imagery and HYSPLIT back trajectories originating from the five PM_{10} monitoring sites in Imperial County and other monitoring sites in Riverside and Yuma counties.[233] The Demonstration states that "[a]s strong southerly outflow winds blew over open natural desert areas south and southeast of Imperial County, fugitive windblown dust significantly affected all air quality monitors within the region."[234]

Identification of reasonable controls

In Section V, ICAPCD provided detailed information on the current set of required controls in the Imperial County PM_{10} nonattainment area, including information on nonattainment status and a description and timeline of implementation of Regulation VIII, which includes Rules 800, 801, 802, 803, 804, 805, and 806. Regulation VIII was adopted by ICAPCD on October 16, 2012, and

[232] Demonstration, Section II
[233] Demonstration, Section II
[234] Demonstration, Section II

Rules 800, 804, 805 and 806 were approved by the EPA as Best Available Control Measure (BACM) level rules on April 22, 2013, with an effective date of May 22, 2013. Regulation VIII addresses the desert open areas managed by the Bureau of Land Management (BLM), U.S. Border Patrol, the California Department of Parks, and construction, open areas, track out, paved and unpaved roads, and agricultural operations.[235] ICAPCD also notes that "[b]oth permitted and non-permitted sources are required to comply with Regulation VIII requirements that address fugitive dust emissions."[236]

As identified above, the Demonstration states that the potential source area includes "open natural desert areas south and southeast of Imperial County." This statement is supported by the HYSPLIT back trajectory analysis, which shows the majority of the trajectory passing through Mexico to the south and southeast before continuing into Imperial County.[237] An assessment of reasonable controls in northern Mexico and Arizona are not required, as sources in Mexico and Arizona are not within ICAPCD's or CARB's jurisdictional boundaries.[238]

Evidence of effective implementation and enforcement

ICAPCD provided information on source-permitted inspections and public complaints that occurred during the event and stated in the Demonstration that "[a]n evaluation of all inspection reports, air quality complaints, compliance reports, and other documentation indicate no evidence of unusual anthropogenic-based PM_{10} emissions, officially declared as a No Burn Day, related to agricultural burning, waste burning or dust."[239]

Not reasonably preventable

While high wind dust events do not require a case-specific justification that the event was also not reasonably preventable,[240] ICAPCD's Demonstration discusses this criterion and states that "[t]he PM_{10} exceedance measured at the Niland monitor was caused by naturally occurring gusty southerly outflow winds that transported windblown dust into Imperial County and other parts of southern California from areas located within the Sonoran Desert regions to the south and southeast of Imperial County," and, therefore, a specific showing of the not reasonably preventable criterion is not required.[241]

EPA conclusion regarding nRCP criterion

Generally, State Implementation Plan (SIP) rules must be enforceable and must not relax existing requirements (see CAA sections 110(l) and 193). Rules implementing BACM and Best Available Control Technologies (BACT) are required in serious PM_{10} nonattainment areas (see CAA sections 189(a)(1) and 189(b)(1)). ICAPCD regulates a PM_{10} nonattainment area classified

[235] Demonstration, Section V
[236] Demonstration, Section V
[237] Demonstration, Section II
[238] 40 CFR part 50.14 (b)(8)(vii)
[239] Demonstration, Section V
[240] 40 CFR part 50.14 (b)(5)(iv)
[241] Demonstration, Section VI

as serious (see 40 CFR part 81), so the applicable SIP should contain rules that implement BACM on contributing anthropogenic sources of windblown dust.

On July 8, 2010,[242] the EPA approved versions of the rules that comprise Regulation VIII, but required revisions to Rules 800, 804, 805, and 806. On April 22, 2013, the EPA fully approved these rule revisions into the California SIP. [243] The final rule also stated that the "EPA's preliminary view is that the Regulation VIII rules as revised in October 2012 constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the exceptional events rule, including reasonable and appropriate control measures on significant contributing anthropogenic sources."[244] The most recent BACM determinations for the rules are not within five years of the date of the event, but the EPA considers the controls to continue to constitute reasonable controls based on our review of analogous rules in other PM_{10} nonattainment areas and because the latest available emissions inventory information indicates that the significant source categories remain the same in Imperial County as they were when the BACM determinations were last made.[245] Therefore, the EPA is satisfied that the nRCP criterion of the EER is met.

Table K.3: Documentation of nRCP

Exceedance Date	**Demonstration Citation**	**Quality of Evidence**	**Criterion Met?**
June 23, 2018	Section II, V, and VI	Sufficient	Yes

3. Clear Causal Relationship (CCR)

Comparison with historical concentrations

In Section IV of the Demonstration, ICAPCD included a comparison with historical concentrations, as required by 40 CFR §50.14(c)(3)(iv)(C). In the Demonstration, ICAPCD compared the event-related PM_{10} concentrations with concentrations from 2010-2018 by highlighting the event day compared to routine data throughout the year and the season in which the exceedance occurred (April – June). The analysis also showed that the 24-hour PM_{10} concentration on the exceedance day was "outside the normal concentration levels when comparing to non-event days and event days."[246]

Evidence of transport of high wind dust emissions from the source area to the monitor

In addition to analyses presented in Sections I and II, Section III of the Demonstration included: a "ramp-up" analysis of the event data that showed satellite imagery, general wind speed, gust, and direction in the upwind areas, locations of NWS advisories, and hourly PM_{10} concentrations measured at monitoring sites in Imperial County; a 72-hour time series of PM_{10} concentrations

[242] 75 FR 39366
[243] 78 FR 23677
[244] 78 FR 23682
[245] TSD Addendum (December 2019); CARB, CEPAM: 2016 SIP – Standard Emission Tool, Emissions Projections for Imperial County, December 5, 2019.
[246] Demonstration, Section IV

measured at monitoring sites in Imperial County and visibility from regional NWS stations; tables of wind speed, gust, and direction measurements at selected meteorological sites in the area and PM_{10} concentrations from monitoring sites in Imperial County; and Air Quality Index (AQI) information.

Appendix A of the Demonstration included NWS urgent weather messages and advisories. Consistent with the discussion in Sections I, II, and III of the Demonstration, NWS Phoenix, AZ issued an area forecast discussion for Southeast California/Southwest Arizona at 1:26 PM MST on June 23, 2018, and stated that "[for] Southeast California/Southwest Arizona… strong winds will be of some concern through the early evening"[247] with an update at 2:55 PM MST stating that "[g]usty southerly winds have stirred up a few dust plumes (most evident over Mexico…)."[248]

Appendix B of the Demonstration included Quality Controlled Local Climatological Data for NWS airport sites in Imperial, Riverside, Yuma and San Diego counties. On June 23, 2018, these data show weather types of haze (HZ) observed at 12:53 and 13:36 hours at the Imperial County airport NWS station, weather types of HZ observed from 7:59 to 16:59 hours at the Yuma Auxiliary Airfield NWS station, and weather types of HZ observed at 8:57, 11:57, and 15:29 hours at the Yuma MCAS NWS station.

Appendix C of the Demonstration included NWS public zone maps, weather synopses and stories from the San Diego and Phoenix NWS offices, an Imperial County web posting of potential elevated PM concentrations, the Imperial County No Burn Day determination for June 23, 2018, an Imperial County PM_{10} advisory for June 23, 2018, NOAA satellite smoke test product from June 23, 2018, indicating blowing dust in Northwestern Mexico and Southeastern Arizona, AQI information, and the public comment notice (affidavit).

In the Demonstration, ICAPCD concluded that "southerly outflow winds transported fugitive emissions from open natural desert areas, located within northern Mexico and southwestern Arizona (all part of the Sonoran Desert)."[249]

EPA conclusion regarding CCR criterion

The analyses included in the Demonstration, specifically, the evaluation of several years of PM_{10} monitoring data, numerous time-series graphs and tables of wind speed, wind gusts, wind direction, and hourly PM_{10} concentrations throughout Imperial County, the "ramp-up" analysis, NOAA HYSPLIT back trajectory analysis, NWS station reports of reduced visibility and haze, and the issuance of a NWS area forecast discussion regarding haze, dust, and south and southeast winds sufficiently demonstrate that high wind speeds in upwind areas caused emissions from natural desert areas and reasonably controlled local anthropogenic sources to the south and southeast of Niland, which were transported to Niland and caused an exceedance of the 24-hour PM_{10} NAAQS. Therefore, the Demonstration shows a clear causal relationship between the high wind dust event emissions and the exceedances measured at Niland.

[247] Demonstration, Appendix A
[248] Demonstration, Appendix A
[249] Demonstration, Section VI

Table K.4: Documentation of CCR

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
June 23, 2018	Section I, II, III, IV, VI Appendices A, B, and C	Sufficient	Yes

4. Natural Event

ICAPCD stated in the Demonstration that "the PM_{10} exceedance that occurred at Niland on June 23, 2018, was caused by the transport of windblown dust into Imperial County by strong southerly outflow winds associated with a 'well-defined' Gulf Surge that entered the region [and] [a]t the time of the event, anthropogenic sources, within Imperial County were reasonably controlled [and] [t]he event therefore qualifies as a natural event,"[250] and provided evidence that the emissions originated from desert areas located within northern Mexico and that reasonable controls on contributing anthropogenic sources were in place at the time of the event.

Natural event conclusion

The CCR and nRCP analyses demonstrate that event-related emissions of windblown dust were from natural undisturbed lands and that upwind anthropogenic sources were subject to reasonable controls at the time of the event. Therefore, the EPA is satisfied that the high wind dust event met the definition of a natural event.

Table K.5: Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
June 23, 2018	Section I, II, III, IV, V, VI	Sufficient	Yes

5. Schedule and Procedural Requirements

In addition to technical Demonstration requirements, 40 CFR §50.14(c) and 40 CFR §51.930 specify schedule and procedural requirements an air agency must follow to request data exclusion. Table K.6 outlines the EPA's evaluation of these requirements.

Table K.6: Schedules and Procedural Criteria

Criterion	Reference	Demonstration Citation	Criterion Met?
Did the agency provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Sufficient	Yes
Did the agency submit an Initial Notification of Potential Exceptional Event and flag the affected data in the EPA's Air Quality System (AQS)?	40 CFR §50.14 (c)(2)(i)	Sufficient	Yes

[250] Demonstration, Section VI

Criterion	Reference	Demonstration Citation	Criterion Met?
If applicable, did the initial notification and demonstration submittals meet the deadlines for data influenced by exceptional events for use in initial area designations? Or the deadlines established by the EPA during the Initial Notification of Potential Exceptional Events process, if applicable?	40 CFR §50.14 Table 2 40 CFR §50.14 (c)(2)(i)(B)	Sufficient	Yes
Was the public comment process followed and documented? • Did the agency document that the comment period was open for a minimum of 30 days? • Did the agency submit to the EPA any public comments received? • Did the state address comments disputing or contradicting factual evidence provided in the demonstration?	40 CFR §50.14 (c)(3)(v)	Sufficient	Yes
Has the agency met requirements regarding submission of a mitigation plan, if applicable?	40 CFR §51.930 (b)	NA	NA

6. Conclusion

The EPA has reviewed the documentation provided by CARB and ICAPCD to support the conclusion that a high wind dust event caused an exceedance of the 24-hour PM_{10} NAAQS at Niland on June 23, 2018. The EPA has determined that the flagged exceedance at this monitoring station on this day meet the definition of an exceptional event: the high wind dust event affected air quality in such a way that there exists a clear causal relationship between the event and the monitored exceedance, was not reasonably preventable or controllable, and meets the definition of a natural event. The EPA has also determined that CARB and ICAPCD have satisfied the schedule and procedural requirements for data exclusion.

L. Event Day: June 28, 2018

Table L.1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m³)
June 28, 2018	Niland	06-025-4004-3	173

1. Narrative Conceptual Model

Sections I and II of the Demonstration provided a narrative conceptual model of the event and included characteristics of Imperial County, such as general description of the geography, topography, and meteorology, and a description and map of the ambient air quality monitoring network and meteorological sites (see Figure L.1).

Figure L.1: Monitoring Sites in Imperial County[251]

Sections I and II of the Demonstration further described the event-specific characteristics and included ICAPCD's conclusion that the exceedance measured at the Niland monitoring station (Niland) was caused by "a forecasted low-pressure system [that] moved across southern California and brought gusty westerly winds across southeastern California. The gusty westerly

[251] Demonstration, Section I

winds generated emissions from within the open mountain ranges and surrounding open natural deserts within San Diego and Imperial Counties [and] [t]hese windblown dust emissions were transported to all the Imperial County regional air quality monitors,"[252] and that the exceedance qualifies as an exceptional event under the EER. ICAPCD summarized the event and included a table of hourly PM_{10} concentrations measured on June 27-29, 2018 at monitoring sites in Riverside, Imperial and Yuma counties, a 72-hour time-series of PM_{10} concentration profiles for monitoring sites in the area, two 72-hour time series of wind speed and wind gust measurements from select meteorological sites in the area, and 2:00 PM and 5:00 PM PST 12-hour NOAA Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) back trajectories from monitoring sites in the area.

Based on the information described above, ICAPCD's Demonstration satisfies the narrative conceptual model criterion of the EER.

Table L.2: Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
June 28, 2018	Sections I and II	Sufficient	Yes

2. Not Reasonably Controllable or Preventable (nRCP)

High wind threshold

ICAPCD provided documentation showing that sustained wind speeds associated with the event were above the EPA's 25 mph high wind threshold on June 28, 2018. For example, maximum sustained wind speeds of 28 mph with gusts of 36 mph were measured at the El Centro NAF National Weather Service (NWS) station.

Identification of contributing sources

ICAPCD analysis shows HYSPLIT back trajectories originating from the five PM_{10} monitoring sites in Imperial County and other monitoring sites in Riverside and Yuma counties.[253] The Demonstration states that "strong gusty westerly winds blew over open natural mountains and desert areas west and southwest of Imperial County."[254]

Identification of reasonable controls

In Section V, ICAPCD provided detailed information on the current set of required controls in the Imperial County PM_{10} nonattainment area, including information on nonattainment status and a description and timeline of implementation of Regulation VIII, which includes Rules 800, 801, 802, 803, 804, 805, and 806. Regulation VIII was adopted by ICAPCD on October 16, 2012, and Rules 800, 804, 805 and 806 were approved by the EPA as Best Available Control Measure

[252] Demonstration, Section II
[253] Demonstration, Section II
[254] Demonstration, Section II

(BACM) level rules on April 22, 2013, with an effective date of May 22, 2013. Regulation VIII addresses the desert open areas managed by the Bureau of Land Management (BLM), U.S. Border Patrol, the California Department of Parks, and construction, open areas, track out, paved and unpaved roads, and agricultural operations.[255] ICAPCD also notes that "[b]oth permitted and non-permitted sources are required to comply with Regulation VIII requirements that address fugitive dust emissions."[256]

As identified above, the Demonstration states that the potential source area includes "open natural mountains and desert areas west and southwest of Imperial County." This statement is supported by the HYSPLIT back trajectory analysis, which shows a small portion of the trajectory passing through the southeastern portion of San Diego County before continuing into Imperial County.[257] Based on a review of satellite imagery, this area appears to predominately natural desert that transitions to mountainous terrain over 3000 ft in elevation. San Diego County is currently a PM_{10} attainment area with no federally required PM_{10} SIP control measures. San Diego County does have local control measures that reduce PM (including PM_{10}) from sources such as: Rule 50 Visible Emissions, Rule 51 Nuisance, Rule 52 Particulate Matter, Rule 54 Dust and Fumes, Rule 55 Fugitive Dust Control, and Rule 101 Burning Control.

Evidence of effective implementation and enforcement

ICAPCD provided information on source-permitted inspections and public complaints that occurred during the event and stated in the Demonstration that "[a]n evaluation of all inspection reports, air quality complaints, compliance reports, and other documentation indicate no evidence of unusual anthropogenic-based PM_{10} emissions, officially declared as a Partial Burn Day, related to agricultural burning, waste burning or dust."[258]

Not reasonably preventable

While high wind dust events do not require a case-specific justification that the event was also not reasonably preventable,[259] ICAPCD's Demonstration discusses this criterion and states that "[t]he PM_{10} exceedance measured at the Niland monitor was caused by naturally occurring strong gusty westerly winds that transported windblown dust into Imperial County from areas located within the Sonoran Desert regions to the west of Imperial County," and, therefore, a specific showing of the not reasonably preventable criterion is not required.[260]

EPA conclusion regarding nRCP criterion

Generally, State Implementation Plan (SIP) rules must be enforceable and must not relax existing requirements (see CAA sections 110(l) and 193). Rules implementing BACM and Best Available Control Technologies (BACT) are required in serious PM_{10} nonattainment areas (see

[255] Demonstration, Section V
[256] Demonstration, Section V
[257] Demonstration, Section II
[258] Demonstration, Section V
[259] 40 CFR part 50.14 (b)(5)(iv)
[260] Demonstration, Section VI

CAA sections 189(a)(1) and 189(b)(1)). ICAPCD regulates a PM_{10} nonattainment area classified as serious (see 40 CFR part 81), so the applicable SIP should contain rules that implement BACM on contributing anthropogenic sources of windblown dust.

On July 8, 2010,[261] the EPA approved versions of the rules that comprise Regulation VIII, but required revisions to Rules 800, 804, 805, and 806. On April 22, 2013, the EPA fully approved these rule revisions into the California SIP. [262] The final rule also stated that the "EPA's preliminary view is that the Regulation VIII rules as revised in October 2012 constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the exceptional events rule, including reasonable and appropriate control measures on significant contributing anthropogenic sources."[263] The most recent BACM determinations for the rules are not within five years of the date of the event, but the EPA considers the controls to continue to constitute reasonable controls based on our review of analogous rules in other PM_{10} nonattainment areas and because the latest available emissions inventory information indicates that the significant source categories remain the same in Imperial County as they were when the BACM determinations were last made.[264]

The EPA also considers the control measures in place in San Diego County to be reasonable controls for this event based on San Diego's PM_{10} attainment status and the back-trajectory analysis showing the trajectory passing through a portion of San Diego County that appears to be predominately natural desert and mountainous areas with few sources of anthropogenic windblown dust. Therefore, the EPA is satisfied that the nRCP criterion of the EER is met.

Table L.3: Documentation of nRCP

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
June 28, 2018	Section II, V, and VI	Sufficient	Yes

3. Clear Causal Relationship (CCR)

Comparison with historical concentrations

In Section IV of the Demonstration, ICAPCD included a comparison with historical concentrations, as required by 40 CFR §50.14(c)(3)(iv)(C). In the Demonstration, ICAPCD compared the event-related PM_{10} concentrations with concentrations from 2010-2018 by highlighting the event day compared to routine data throughout the year and the season in which the exceedance occurred (April – June). The analysis also showed that the 24-hour PM_{10} concentration on the exceedance day was "outside the normal concentration levels when comparing to similar event days and non-event days."[265]

[261] 75 FR 39366
[262] 78 FR 23677
[263] 78 FR 23682
[264] TSD Addendum (December 2019); CARB, CEPAM: 2016 SIP – Standard Emission Tool, Emissions Projections for Imperial County, December 5, 2019.
[265] Demonstration, Section IV

Evidence of transport of high wind dust emissions from the source area to the monitor

In addition to analyses presented in Sections I and II, Section III of the Demonstration included: NOAA smoke test product map of blowing dust; a "ramp-up" analysis of the event data that showed satellite imagery, general wind speed, gust, and direction in the upwind areas, and hourly PM_{10} concentrations measured at Niland; a 72-hour time series of PM_{10} concentrations measured at monitoring sites in Imperial County and visibility from regional NWS stations; tables of wind speed, gust, and direction measurements at selected meteorological sites in the area and PM_{10} concentrations from monitoring sites in Imperial County, and Air Quality Index (AQI) information.

Appendix A of the Demonstration included NWS urgent weather messages and advisories. Consistent with the discussion in Sections I, II, and III of the Demonstration, NWS Phoenix AZ issued a forecast discussion for Southeast California/Southwest Arizona at 5:35 AM MST on June 28, 2018 and stated that "[g]usty afternoon SW winds will be the primary aviation impact [with] [s]ome lofted blowing dust." NWS San Diego, CA issued a forecast discussion at 2:01 PM PDT on June 28, 2018, and stated that "[a] low pressure trough bearing down on the West will boost winds in the mountains and deserts this afternoon and evening, rather brisk in the usual passes and adjacent deserts [with] [i]solated gusts such as in San Gorgonio Pass will exceed 40 mph, but lots of areas will gust 30-40 mph."[266]

Appendix B of the Demonstration included Quality Controlled Local Climatological Data for NWS airport sites in Imperial, Riverside, and San Diego counties, and Yuma, AZ. While no haze or blowing dust was recorded at these sites, reduced visibility was observed 14:53, 16:53, and 18:53 hours at the Imperial County Airport NWS station on June 28, 2018.

Appendix C of the Demonstration included NWS public zone maps, Imperial County web posting of potential elevated PM concentrations, NOAA smoke text narrative for June 28, 2018 indicating blowing dust in southern California, AQI information, the Imperial County Partial Burn Day determination for June 28, 2018, and the public comment notice (affidavit).

In the Demonstration, ICAPCD concluded that "high gusty westerly winds transported fugitive emissions from open natural Mountain and desert areas, located within San Diego County and Imperial County (all part of the Sonoran Desert)."[267]

EPA conclusion regarding CCR criterion

The analyses included in the Demonstration, specifically, the evaluation of several years of PM_{10} monitoring data, numerous time-series graphs and tables of wind speed, wind gusts, wind direction, and hourly PM_{10} concentrations throughout Imperial County, the "ramp-up" analysis, NOAA HYSPLIT back trajectory analysis, and the issuance of NWS wind area forecast discussions sufficiently demonstrate that high wind speeds in upwind areas caused emissions from natural desert areas and reasonably controlled local anthropogenic sources west and southwest of Niland, which were transported to Niland and caused an exceedance of the 24-hour

[266] Demonstration, Appendix A
[267] Demonstration, Section VI

PM_{10} NAAQS. Therefore, the Demonstration shows a clear causal relationship between the high wind dust event emissions and the exceedances measured at Niland.

Table L.4: Documentation of CCR

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
June 28, 2018	Section I, II, III, IV, VI Appendices A, B, and C	Sufficient	Yes

4. Natural Event

ICAPCD stated in the Demonstration that "the PM_{10} exceedance that occurred at the Niland monitor on June 28, 2018, was caused by the transport of windblown dust into Imperial County by strong gusty westerly winds associated with a low pressure system that passed through the region [and] [a]t the time of the event, anthropogenic sources, within Imperial County were reasonably controlled [and] [t]he event therefore qualifies as a natural event,"[268] and provided evidence that the emissions originated from open natural mountains and desert areas west and southwest of Imperial County and that reasonable controls on contributing anthropogenic sources were in place at the time of the event.

Natural event conclusion

The CCR and nRCP analyses demonstrate that event-related emissions of windblown dust were from natural undisturbed lands and that upwind anthropogenic sources were subject to reasonable controls at the time of the event. Therefore, the EPA is satisfied that the high wind dust event met the definition of a natural event.

Table L.5: Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
June 28, 2018	Section I, II, III, IV, V, VI	Sufficient	Yes

5. Schedule and Procedural Requirements

In addition to technical Demonstration requirements, 40 CFR §50.14(c) and 40 CFR §51.930 specify schedule and procedural requirements an air agency must follow to request data exclusion. Table L.6 outlines the EPA's evaluation of these requirements.

[268] Demonstration, Section VI

Table L.6: Schedules and Procedural Criteria

Criterion	Reference	Demonstration Citation	Criterion Met?
Did the agency provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Sufficient	Yes
Did the agency submit an Initial Notification of Potential Exceptional Event and flag the affected data in the EPA's Air Quality System (AQS)?	40 CFR §50.14 (c)(2)(i)	Sufficient	Yes
If applicable, did the initial notification and demonstration submittals meet the deadlines for data influenced by exceptional events for use in initial area designations? Or the deadlines established by the EPA during the Initial Notification of Potential Exceptional Events process, if applicable?	40 CFR §50.14 Table 2 40 CFR §50.14 (c)(2)(i)(B)	Sufficient	Yes
Was the public comment process followed and documented? • Did the agency document that the comment period was open for a minimum of 30 days? • Did the agency submit to the EPA any public comments received? • Did the state address comments disputing or contradicting factual evidence provided in the demonstration?	40 CFR §50.14 (c)(3)(v)	Sufficient	Yes
Has the agency met requirements regarding submission of a mitigation plan, if applicable?	40 CFR §51.930 (b)	NA	NA

6. Conclusion

The EPA has reviewed the documentation provided by CARB and ICAPCD to support the conclusion that a high wind dust event caused an exceedance of the 24-hour PM_{10} NAAQS at Niland on June 28, 2018. The EPA has determined that the flagged exceedance at this monitoring station on this day meets the definition of an exceptional event: the high wind dust event affected air quality in such a way that there exists a clear causal relationship between the event and the monitored exceedance, was not reasonably preventable or controllable, and meets the definition of a natural event. The EPA has also determined that CARB and ICAPCD have satisfied the schedule and procedural requirements for data exclusion.

M. Event Day: July 9, 2018

Table M.1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m³)
July 9, 2018	Brawley	06-025-0007-3	230
July 9, 2018	Calexico	06-025-0005-3	307
July 9, 2018	El Centro	06-025-1003-4	256
July 9, 2018	Niland	06-025-4004-3	181
July 9, 2018	Westmorland	06-025-4003-3	185

1. Narrative Conceptual Model

Sections I and II of the Demonstration provided a narrative conceptual model of the event and included characteristics of Imperial County, such as general description of the geography, topography, and meteorology, and a description and map of the ambient air quality monitoring network and meteorological sites (see Figure M.1).

Figure M.1: Monitoring Sites in Imperial County[269]

[269] Demonstration, Section I

Sections I and II of the Demonstration further described the event-specific characteristics and included ICAPCD's conclusion that the exceedances measured at the Brawley, Calexico, El Centro, Niland, and Westmorland monitoring stations (Brawley, Calexico, El Centro, Niland, and Westmorland) was caused "when unstable monsoonal air surged out of northern Mexico and produced gusty east-to-southeast-south winds that generated emissions from within the natural open desert areas within northern Mexico and southwestern Arizona …[and] [t]hese windblown dust emissions were transported to all the Imperial County regional air quality monitors,"[270] and that the exceedances qualify as an exceptional event under the EER. ICAPCD summarized the event and included a table of hourly PM_{10} concentrations measured on July 8-10, 2018, at monitoring sites in Riverside, Imperial and Yuma counties, a 72-hour time-series of PM_{10} concentration profiles for monitoring sites in the area, two 72-hour time series of wind speed and wind gust measurements from select meteorological sites in the area, and 00:00 AM and 9:00 PM PST 12-hour NOAA Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) back trajectories from monitoring sites in the area.

Based on the information described above, ICAPCD's Demonstration satisfies the narrative conceptual model criterion of the EER.

Table M.2: Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
July 9, 2018	Sections I and II	Sufficient	Yes

2. Not Reasonably Controllable or Preventable (nRCP)

High wind threshold

ICAPCD provided documentation showing that sustained wind speeds associated with the event were above the EPA's 25 mph high wind threshold on July 9, 2018. For example, maximum sustained wind speeds of 37 mph with gusts of 49 mph were measured at the El Centro NAF National Weather Service (NWS) station and maximum sustained wind speeds of 30 mph with gusts of 44 mph were measured at the Imperial County Airport NWS station in the early morning hours of July 9, 2018. Maximum sustained wind speeds of 25 mph with gusts of 34 mph were measured at the Imperial County Airport NWS station in the evening hours of July 9, 2018.

Identification of contributing sources

ICAPCD analysis shows satellite imagery and HYSPLIT back trajectories originating from the five PM_{10} monitoring sites in Imperial County and other monitoring sites in Riverside and Yuma counties.[271] The Demonstration states that "[a]s monsoonal moisture increased and thunderstorm activity created dust storms outflow boundary gusty southerly winds blew over open natural desert areas, within Arizona and Mexico, and into Imperial County causing an exceedance of the NAAQS at all air quality monitors."[272]

[270] Demonstration, Section II
[271] Demonstration, Section II
[272] Demonstration, Section II

Identification of reasonable controls

In Section V, ICAPCD provided detailed information on the current set of required controls in the Imperial County PM_{10} nonattainment area, including information on nonattainment status and a description and timeline of implementation of Regulation VIII, which includes Rules 800, 801, 802, 803, 804, 805, and 806. Regulation VIII was adopted by ICAPCD on October 16, 2012, and Rules 800, 804, 805 and 806 were approved by the EPA as Best Available Control Measure (BACM) level rules on April 22, 2013, with an effective date of May 22, 2013. Regulation VIII addresses the desert open areas managed by the Bureau of Land Management (BLM), U.S. Border Patrol, the California Department of Parks, and construction, open areas, track out, paved and unpaved roads, and agricultural operations.[273] ICAPCD also notes that "[b]oth permitted and non-permitted sources are required to comply with Regulation VIII requirements that address fugitive dust emissions."[274]

As identified above, the Demonstration states that the potential source area includes "natural desert areas, within Arizona and Mexico, and into Imperial County."[275] On July 9, 2018, the Imperial County monitors measured two periods of elevated PM_{10} concentrations.[276] The wind direction data presented in Appendix B in the Demonstration show that winds shifted drastically from the west to the east-southeast in the late evening hours of July 8, 2018, and the early morning hours of July 9, 2018. Although the HYSPLIT back trajectories at 00:00 PST on July 9, 2018, indicate winds from the west, the wind data at the National Weather Service (NWS) sites in El Centro NAF and Imperial County Airport indicate winds were from the east-southeast at that time of the elevated PM_{10} concentrations in the early morning hours.[277] In addition, the ICAPCD provided radar images indicating a storm front coming from the east at 00:18 PST on July 9, 2018.[278] In the hours preceding the elevated PM_{10} concentrations, the winds dramatically shifted from the west to the east-southeast. Due to this rapid change in wind direction in the early morning hours, the HYSPLIT back trajectories may not provide an accurate representation of transport direction. The EPA determined that the NWS wind data and radar images better represented the wind direction that resulted in elevated PM_{10} concentrations at several monitors in the early morning hours of July 9, 2018. During the evening hours on July 9, 2018, elevated PM_{10} concentrations coincided with winds and HYSPLIT back trajectories coming from the east-southeast.[279] Based on a review of satellite imagery, the areas to the east-southeast in Arizona, Mexico, and Imperial County appear to be predominately natural desert. An assessment of reasonable controls in Mexico and Arizona are not required, as sources in Mexico and Arizona are not within ICAPCD's or CARB's jurisdictional boundaries.[280]

[273] Demonstration, Section V
[274] Demonstration, Section V
[275] Demonstration, Section II
[276] Demonstration, Section II
[277] Demonstration, Appendix B
[278] Demonstration, Section III
[279] Demonstration, Appendix B
[280] 40 CFR part 50.14 (b)(8)(vii)

Evidence of effective implementation and enforcement

ICAPCD provided information on source-permitted inspections and public complaints that occurred during the event and stated in the Demonstration that "[a]n evaluation of all inspection reports, air quality complaints, compliance reports, and other documentation indicate no evidence of unusual anthropogenic-based PM_{10} emissions, officially declared as a No Burn Day, related to agricultural burning, waste burning or dust."[281]

Not reasonably preventable

While high wind dust events do not require a case-specific justification that the event was also not reasonably preventable,[282] ICAPCD's Demonstration discusses this criterion and states that "[t]he PM_{10} exceedance measured at the Brawley, Calexico, El Centro, Niland, and Westmorland monitors resulted from naturally occurring strong gusty east to southeast to south winds that transported windblown dust into Imperial County and other parts of southern California from areas located within the natural open desert regions within western Arizona and northern Mexico" and, therefore, a specific showing of the not reasonably preventable criterion is not required.[283]

EPA conclusion regarding nRCP criterion

Generally, State Implementation Plan (SIP) rules must be enforceable and must not relax existing requirements (see CAA sections 110(l) and 193). Rules implementing BACM and Best Available Control Technologies (BACT) are required in serious PM_{10} nonattainment areas (see CAA sections 189(a)(1) and 189(b)(1)). ICAPCD regulates a PM_{10} nonattainment area classified as serious (see 40 CFR part 81), so the applicable SIP should contain rules that implement BACM on contributing anthropogenic sources of windblown dust.

On July 8, 2010,[284] the EPA approved versions of the rules that comprise Regulation VIII, but required revisions to Rules 800, 804, 805, and 806. On April 22, 2013, the EPA fully approved these rule revisions into the California SIP. [285] The final rule also stated that the "EPA's preliminary view is that the Regulation VIII rules as revised in October 2012 constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the exceptional events rule, including reasonable and appropriate control measures on significant contributing anthropogenic sources."[286] The most recent BACM determinations for the rules are not within five years of the date of the event, but the EPA considers the controls to continue to constitute reasonable controls based on our review of analogous rules in other PM_{10} nonattainment areas and because the latest available emissions inventory information indicates that the significant

[281] Demonstration, Section V
[282] 40 CFR part 50.14 (b)(5)(iv)
[283] Demonstration, Section VI
[284] 75 FR 39366
[285] 78 FR 23677
[286] 78 FR 23682

source categories remain the same in Imperial County as they were when the BACM determinations were last made.[287]

Therefore, the EPA is satisfied that the nRCP criterion of the EER is met.

Table M.3: Documentation of nRCP

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
July 9, 2018	Section II, V, and VI	Sufficient	Yes

3. Clear Causal Relationship (CCR)

Comparison with historical concentrations

In Section IV of the Demonstration, ICAPCD included a comparison with historical concentrations, as required by 40 CFR §50.14(c)(3)(iv)(C). In the Demonstration, ICAPCD compared the event-related PM_{10} concentrations with concentrations from 2010-2018 by highlighting the event day compared to routine data throughout the year and the season in which the exceedance occurred (July – September). The analysis also showed that the 24-hour PM_{10} concentration on the exceedance day was "outside the normal concentration levels when comparing to event days and non-event days."[288]

Evidence of transport of high wind dust emissions from the source area to the monitor

In addition to analyses presented in Sections I and II, Section III of the Demonstration included: satellite imagery including a "wall of dust" image moving west toward Imperial County; radar images indicating storm activity and movement; a "ramp-up" analysis of the event data that showed satellite imagery, general wind speed, gust, and direction in the upwind areas; a 72-hour time series of PM_{10} concentrations measured at monitoring sites in Imperial County and visibility from regional NWS stations; a table of wind speed, gust, and direction measurements at selected meteorological sites in the area and hourly PM_{10} concentrations measured at Brawley, Westmorland, Niland, El Centro, and Calexico; and Air Quality Index (AQI) information.

Appendix A of the Demonstration included NWS urgent weather messages and advisories. Consistent with the discussion in Sections I, II, and III of the Demonstration, NWS Phoenix, AZ issued a dust advisory for southeastern Imperial County at 00:03 AM MST on July 9, 2018, which was in effect until 01:49 AM MST on July 9, 2018, and stated that a "wall of dust was along a line extending from near Martinez Lake to near Fortuna Foothills to 29 miles south of Wellton, moving west at 20 mph," and at 1:49 AM MST stated "[t]he most dense areas of blowing dust is [sic] further west including the El Centro area."[289] The NWS Phoenix, AZ also issued a dust storm warning for western Imperial County at 22:07 MST on July 9, 2018, which was in effect until 23:00 MST on July 9, 2018, and stated that "a wall of dust was along a line

[287] TSD Addendum (December 2019); CARB, CEPAM: 2016 SIP – Standard Emission Tool, Emissions Projections for Imperial County, December 5, 2019.
[288] Demonstration, Section IV
[289] Demonstration, Appendix A

extending from 22 miles north of Brawley to 13 miles southeast of Bombay Beach to near Westmorland to near El Centro Naval Airfield to near Mt. Signal, moving northwest at 40 mph."[290]

Appendix B of the Demonstration included Quality Controlled Local Climatological Data for NWS airport sites in Imperial, Riverside, and San Diego, and Yuma counties. These data show weather types of haze (HZ) and blowing dust (BLDU) observed at from 21:19 to 23:56 hours on July 9, 2018, at the El Centro NAF NWS station and weather types of HZ observed at from 00:53 to 02:14 hours on July 9, 2018, at the Imperial County Airport NWS station.

Appendix C of the Demonstration included NWS public zone maps, weather story information from the San Diego and Phoenix NWS offices, Imperial County web postings of potential elevated PM concentrations, a preliminary storm report issued by the Phoenix NWS office, AQI information, the Imperial County No Burn Day determination for July 9, 2018, and the public comment notice (affidavit).

In the Demonstration, ICAPCD concluded that "high gusty outflow boundary winds transported fugitive emissions from natural open desert areas, located within northern Mexico, southwestern Arizona, and Imperial County (all part of the Sonoran Desert)."[291]

EPA conclusion regarding CCR criterion

The analyses included in the Demonstration, specifically, the evaluation of several years of PM_{10} monitoring data, numerous time-series graphs and tables of wind speed, wind gusts, wind direction, and hourly PM_{10} concentrations throughout Imperial County, the "ramp-up" analysis, NOAA HYSPLIT back trajectory analysis, NWS station reports of reduced visibility, blowing dust, and haze, and the issuance of NWS dust advisories and dust storm warnings sufficiently demonstrate that high wind speeds in upwind areas caused emissions from open desert areas, located within northern Mexico, southwestern Arizona, and Imperial County and reasonably controlled local anthropogenic sources in upwind areas, which were transported to Brawley, Calexico, El Centro, Niland, and Westmorland monitors and caused an exceedance of the 24-hour PM_{10} NAAQS. Therefore, the Demonstration shows a clear causal relationship between the high wind dust event emissions and the exceedances measured at Brawley, Calexico, El Centro, Niland, and Westmorland.

Table M.4: Documentation of CCR

Exceedance Date	**Demonstration Citation**	**Quality of Evidence**	**Criterion Met?**
July 9, 2018	Section I, II, III, IV, VI Appendices A, B, and C	Sufficient	Yes

[290] Demonstration, Appendix A
[291] Demonstration, Section VI

4. Natural Event

ICAPCD stated in the Demonstration that "the PM_{10} exceedance[s] that occurred at the Brawley, Calexico, El Centro, Niland, and Westmorland monitors on July 9, 2018, was caused by the transport of windblown dust into Imperial County by strong gusty east to southeast to south winds produced by thunderstorm outflows caused by a surge of unstable moist air from northern Mexico into the region PM_{10}…[and] [a]t time of the event, anthropogenic sources, within Imperial County were reasonably controlled. …[and] [t]he event therefore qualifies as a natural event,"[292] and provided evidence that the emissions originated from open natural desert areas, within Arizona and Mexico, and Imperial County and that reasonable controls on contributing anthropogenic sources were in place at the time of the event.

Natural event conclusion

The CCR and nRCP analyses demonstrate that event-related emissions of windblown dust were from natural undisturbed lands and that upwind anthropogenic sources were subject to reasonable controls at the time of the event. Therefore, the EPA is satisfied that the high wind dust event met the definition of a natural event.

Table M.5: Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
July 9, 2018	Section I, II, III, IV, V, VI	Sufficient	Yes

5. Schedule and Procedural Requirements

In addition to technical Demonstration requirements, 40 CFR §50.14(c) and 40 CFR §51.930 specify schedule and procedural requirements an air agency must follow to request data exclusion. Table M.6 outlines the EPA's evaluation of these requirements.

Table M.6: Schedules and Procedural Criteria

Criterion	Reference	Demonstration Citation	Criterion Met?
Did the agency provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Sufficient	Yes
Did the agency submit an Initial Notification of Potential Exceptional Event and flag the affected data in the EPA's Air Quality System (AQS)?	40 CFR §50.14 (c)(2)(i)	Sufficient	Yes
If applicable, did the initial notification and demonstration submittals meet the deadlines for data influenced by exceptional events for use in initial area designations? Or the deadlines	40 CFR §50.14 Table 2 40 CFR §50.14 (c)(2)(i)(B)	Sufficient	Yes

[292] Demonstration, Section VI

Criterion	Reference	Demonstration Citation	Criterion Met?
established by the EPA during the Initial Notification of Potential Exceptional Events process, if applicable?			
Was the public comment process followed and documented? • Did the agency document that the comment period was open for a minimum of 30 days? • Did the agency submit to the EPA any public comments received? • Did the state address comments disputing or contradicting factual evidence provided in the demonstration?	40 CFR §50.14 (c)(3)(v)	Sufficient	Yes
Has the agency met requirements regarding submission of a mitigation plan, if applicable?	40 CFR §51.930 (b)	NA	NA

6. Conclusion

The EPA has reviewed the documentation provided by CARB and ICAPCD to support the conclusion that a high wind dust event caused exceedances of the 24-hour PM_{10} NAAQS at Brawley, Calexico, El Centro, Niland, and Westmorland monitors on July 9, 2018. The EPA has determined that the flagged exceedances at these monitoring stations on this day meet the definition of an exceptional event: the high wind dust event affected air quality in such a way that there exists a clear causal relationship between the event and the monitored exceedances, was not reasonably preventable or controllable, and meets the definition of a natural event. The EPA has also determined that CARB and ICAPCD have satisfied the schedule and procedural requirements for data exclusion.

N. Event Day: October 3, 2018

Table N.1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m³)
October 3, 2018	Westmorland	06-025-4003-3	169

1. Narrative Conceptual Model

Sections I and II of the Demonstration provided a narrative conceptual model of the event and included characteristics of Imperial County, such as general description of the geography, topography, and meteorology, and a description and map of the ambient air quality monitoring network and meteorological sites (see Figure N.1).

Figure N.1: Monitoring Sites in Imperial County[293]

Sections I and II of the Demonstration further described the event-specific characteristics and included ICAPCD's conclusion that the exceedance measured at the Westmorland monitoring station (Westmorland) was caused by "an approaching low [that] steered the remnants of Tropical Storm Rosa northward out of Baja California and created a monsoonal-like pattern

[293] Demonstration, Section I

causing unstable atmospheric conditions [and] [t]he resulting meteorological conditions produced thunderstorms that spawned strong, gusty winds that generated emissions from within the natural open mountains and desert areas within San Diego County [and] [t]hese windblown dust emissions were transported to all the Imperial County regional air quality monitors,"[294] and that the exceedance qualifies as an exceptional event under the EER. ICAPCD summarized the event and included a table of hourly PM_{10} concentrations measured on October 2-4, 2018 at monitoring sites in Riverside, Imperial and Yuma counties, a 72-hour time-series of PM_{10} concentration profiles for monitoring sites in the area, two 72-hour time series of wind speed and wind gust measurements from select meteorological sites in the area, and 6:00 PM and 7:00 PM PST 12-hour NOAA Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) back trajectories from monitoring sites in the area.

Based on the information described above, ICAPCD's Demonstration satisfies the narrative conceptual model criterion of the EER.

Table N.2: Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
October 3, 2018	Sections I and II	Sufficient	Yes

2. Not Reasonably Controllable or Preventable (nRCP)

High wind threshold

ICAPCD provided documentation showing that sustained wind speeds associated with the event were above the EPA's 25 mph high wind threshold on October 3, 2018. For example, maximum sustained wind speeds of 29 mph with gusts of 33 mph were measured at the El Centro NAF National Weather Service (NWS) station.

Identification of contributing sources

ICAPCD analysis shows satellite imagery and HYSPLIT back trajectories originating from the five PM_{10} monitoring sites in Imperial County and other monitoring sites in Riverside and Yuma counties.[295] The Demonstration states that "gusty southwest to west winds blew over open natural mountains and desert areas west of Imperial County."[296]

Identification of reasonable controls

In Section V, ICAPCD provided detailed information on the current set of required controls in the Imperial County PM_{10} nonattainment area, including information on nonattainment status and a description and timeline of implementation of Regulation VIII, which includes Rules 800, 801, 802, 803, 804, 805, and 806. Regulation VIII was adopted by ICAPCD on October 16, 2012, and

[294] Demonstration, Section II
[295] Demonstration, Section II
[296] Demonstration, Section II

Rules 800, 804, 805 and 806 were approved by the EPA as Best Available Control Measure (BACM) level rules on April 22, 2013, with an effective date of May 22, 2013. Regulation VIII addresses the desert open areas managed by the Bureau of Land Management (BLM), U.S. Border Patrol, the California Department of Parks, and construction, open areas, track out, paved and unpaved roads, and agricultural operations.[297] ICAPCD also notes that "[b]oth permitted and non-permitted sources are required to comply with Regulation VIII requirements that address fugitive dust emissions."[298]

As identified above, the Demonstration states that the potential source area includes "open natural mountains and desert areas west of Imperial County." This statement is supported by the HYSPLIT back trajectory analysis, which shows a portion of the trajectories passing through the eastern portion of San Diego County and northern Mexico before continuing into Imperial County.[299] Based on a review of satellite imagery, this area appears to predominately natural desert that transitions to mountainous terrain over 3000 ft in elevation. San Diego County is currently a PM_{10} attainment area with no federally required PM_{10} SIP control measures. San Diego County does have local control measures that reduce PM (including PM_{10}) from sources such as: Rule 50 Visible Emissions, Rule 51 Nuisance, Rule 52 Particulate Matter, Rule 54 Dust and Fumes, Rule 55 Fugitive Dust Control, and Rule 101 Burning Control. An assessment of reasonable controls in Mexico is not required, as sources in Mexico are not within ICAPCD's or CARB's jurisdictional boundaries.[300]

Evidence of effective implementation and enforcement

ICAPCD provided information on source-permitted inspections and public complaints that occurred during the event and stated in the Demonstration that "[a]n evaluation of all inspection reports, air quality complaints, compliance reports, and other documentation indicate no evidence of unusual anthropogenic-based PM_{10} emissions, officially declared as a No Burn Day, related to agricultural burning, waste burning or dust."[301]

Not reasonably preventable

While high wind dust events do not require a case-specific justification that the event was also not reasonably preventable,[302] ICAPCD's Demonstration discusses this criterion and states that "[t]he PM_{10} exceedance measured at the Westmorland monitor was caused by naturally occurring gusty outflow westerly winds that transported windblown dust into Imperial County and other parts of southern California from areas located within the Sonoran Desert regions to the west and southwest of Imperial County," and, therefore, a specific showing of the not reasonably preventable criterion is not required.[303]

[297] Demonstration, Section V
[298] Demonstration, Section V
[299] Demonstration, Section II
[300] 40 CFR part 50.14 (b)(8)(vii)
[301] Demonstration, Section V
[302] 40 CFR part 50.14 (b)(5)(iv)
[303] Demonstration, Section VI

EPA conclusion regarding nRCP criterion

Generally, State Implementation Plan (SIP) rules must be enforceable and must not relax existing requirements (see CAA sections 110(l) and 193). Rules implementing BACM and Best Available Control Technologies (BACT) are required in serious PM_{10} nonattainment areas (see CAA sections 189(a)(1) and 189(b)(1)). ICAPCD regulates a PM_{10} nonattainment area classified as serious (see 40 CFR part 81), so the applicable SIP should contain rules that implement BACM on contributing anthropogenic sources of windblown dust.

On July 8, 2010,[304] the EPA approved versions of the rules that comprise Regulation VIII, but required revisions to Rules 800, 804, 805, and 806. On April 22, 2013, the EPA fully approved these rule revisions into the California SIP. [305] The final rule also stated that the "EPA's preliminary view is that the Regulation VIII rules as revised in October 2012 constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the exceptional events rule, including reasonable and appropriate control measures on significant contributing anthropogenic sources."[306] The most recent BACM determinations for the rules are not within five years of the date of the event, but the EPA considers the controls to continue to constitute reasonable controls based on our review of analogous rules in other PM_{10} nonattainment areas and because the latest available emissions inventory information indicates that the significant source categories remain the same in Imperial County as they were when the BACM determinations were last made.[307]

The EPA also considers the control measures in place in San Diego County to be reasonable controls for this event based on San Diego's PM_{10} attainment status and the back-trajectory analysis showing the trajectory passing through the southeastern portion of San Diego County that appears to be predominately natural desert and mountainous areas with few sources of anthropogenic windblown dust. Therefore, the EPA is satisfied that the nRCP criterion of the EER is met.

Table N.3: Documentation of nRCP

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
October 3, 2018	Section II, V, and VI	Sufficient	Yes

3. Clear Causal Relationship (CCR)

Comparison with historical concentrations

In Section IV of the Demonstration, ICAPCD included a comparison with historical concentrations, as required by 40 CFR §50.14(c)(3)(iv)(C). In the Demonstration, ICAPCD

[304] 75 FR 39366
[305] 78 FR 23677
[306] 78 FR 23682
[307] TSD Addendum (December 2019); CARB, CEPAM: 2016 SIP – Standard Emission Tool, Emissions Projections for Imperial County, December 5, 2019.

compared the event-related PM_{10} concentrations with concentrations from 2010-2018 by highlighting the event day compared to routine data throughout the year and the season in which the exceedance occurred (October - December). The analysis also showed that the 24-hour PM_{10} concentration on the exceedance day was "outside the normal concentration levels when comparing event days and non-event days."[308]

Evidence of transport of high wind dust emissions from the source area to the monitor

In addition to analyses presented in Sections I and II, Section III of the Demonstration included: doppler radar images from the KYUX NWS station in Yuma, Arizona, at 16:50, 16:54, and 17:06 hours PST on October 3, 2018, showing a severe thunderstorm and gust front/outflow boundary winds moving toward Westmorland; a "ramp-up" analysis of the event data that showed satellite imagery, general wind speed, gust, and direction in the upwind areas, locations of NWS advisories, and hourly PM_{10} concentrations measured at PM_{10} monitoring sites in Imperial County; a 72-hour time series of PM_{10} concentrations measured at monitoring sites in Imperial County and visibility from regional NWS stations; tables of wind speed, gust, and direction measurements at selected meteorological sites in the area and PM concentrations from monitoring sites in Imperial County; and Air Quality Index (AQI) information.

Appendix A of the Demonstration included NWS urgent weather messages and advisories. Consistent with the discussion in Sections I, II, and III of the Demonstration, NWS Phoenix, AZ issued a significant weather advisory for northwestern Imperial County at 5:51 PM MST on October 3, 2018, which was in effect until 6:45 PM on October 3, 2018, and stated that "a strong thunderstorm near Westmorland, or near Brawley, moving northeast [with] wind gusts up to 50 mph."[309]

Appendix B of the Demonstration included Quality Controlled Local Climatological Data for NWS airport sites in Imperial, Riverside, San Diego, and Yuma counties. These data show weather types of thunderstorms (TS) observed at 16:36 hours at the Imperial County Airport NWS station.

Appendix C of the Demonstration included weather story information from the San Diego and Phoenix NWS offices, advisory events from ICAPCD, AQI information, the Imperial County No Burn Day determination for October 3, 2018, and the public comment notice (affidavit).

In the Demonstration, ICAPCD concluded that "high gusty westerly winds transported fugitive emissions from open natural Mountain and desert areas, located within San Diego County, Mexico and Imperial County (all part of the Sonoran Desert)."[310]

EPA conclusion regarding CCR criterion

The analyses included in the Demonstration, specifically, the evaluation of several years of PM_{10} monitoring data, numerous time-series graphs and tables of wind speed, wind gusts, wind

[308] Demonstration, Section IV
[309] Demonstration, Appendix A
[310] Demonstration, Section VI

direction, and hourly PM_{10} concentrations throughout Imperial County, the "ramp-up" analysis, NOAA HYSPLIT back trajectory analysis, NWS station reports, and the issuance of a NWS severe thunderstorm warning sufficiently demonstrate that high wind speeds in upwind areas caused emissions from natural desert areas and reasonably controlled local anthropogenic sources to the west and southwest of Westmorland, which were transported to Westmorland and caused an exceedance of the 24-hour PM_{10} NAAQS. Therefore, the Demonstration shows a clear causal relationship between the high wind dust event emissions and the exceedances measured at Westmorland.

Table N.4: Documentation of CCR

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
October 3, 2018	Section I, II, III, IV, VI Appendices A, B, and C	Sufficient	Yes

4. Natural Event

ICAPCD stated in the Demonstration that "the PM_{10} exceedance measured at the Westmorland air quality monitor in Imperial County on October 3, 2018, was caused by the transport of windblown dust into Imperial County by strong gusty westerly winds produced by thunderstorm outflows caused by a [sic] monsoonal like conditions [and] [a]t the time of the event, anthropogenic sources, within Imperial County were reasonably controlled [and] [t]he event therefore qualifies as a natural event,"[311] and provided evidence that the emissions originated from open natural mountains and desert areas west of Imperial County and that reasonable controls on contributing anthropogenic sources were in place at the time of the event.

Natural event conclusion

The CCR and nRCP analyses demonstrate that event-related emissions of windblown dust were from natural undisturbed lands and that upwind anthropogenic sources were subject to reasonable controls at the time of the event. Therefore, the EPA is satisfied that the high wind dust event met the definition of a natural event.

Table N.5: Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
October 3, 2018	Section I, II, III, IV, V, VI	Sufficient	Yes

5. Schedule and Procedural Requirements

In addition to technical Demonstration requirements, 40 CFR §50.14(c) and 40 CFR §51.930 specify schedule and procedural requirements an air agency must follow to request data exclusion. Table N.6 outlines the EPA's evaluation of these requirements.

[311] Demonstration, Section VI

Table N.6: Schedules and Procedural Criteria

Criterion	Reference	Demonstration Citation	Criterion Met?
Did the agency provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Sufficient	Yes
Did the agency submit an Initial Notification of Potential Exceptional Event and flag the affected data in the EPA's Air Quality System (AQS)?	40 CFR §50.14 (c)(2)(i)	Sufficient	Yes
If applicable, did the initial notification and demonstration submittals meet the deadlines for data influenced by exceptional events for use in initial area designations? Or the deadlines established by the EPA during the Initial Notification of Potential Exceptional Events process, if applicable?	40 CFR §50.14 Table 2 40 CFR §50.14 (c)(2)(i)(B)	Sufficient	Yes
Was the public comment process followed and documented? • Did the agency document that the comment period was open for a minimum of 30 days? • Did the agency submit to the EPA any public comments received? • Did the state address comments disputing or contradicting factual evidence provided in the demonstration?	40 CFR §50.14 (c)(3)(v)	Sufficient	Yes
Has the agency met requirements regarding submission of a mitigation plan, if applicable?	40 CFR §51.930 (b)	NA	NA

6. Conclusion

The EPA has reviewed the documentation provided by CARB and ICAPCD to support the conclusion that a high wind dust event caused an exceedance of the 24-hour PM_{10} NAAQS at Westmorland on October 3, 2018. The EPA has determined that the flagged exceedance at this monitoring station on this day meet the definition of an exceptional event: the high wind dust event affected air quality in such a way that there exists a clear causal relationship between the event and the monitored exceedance, was not reasonably preventable or controllable, and meets the definition of a natural event. The EPA has also determined that CARB and ICAPCD have satisfied the schedule and procedural requirements for data exclusion.

O. Event Day: October 6, 2018

Table O.1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m³)
October 6, 2018	Brawley	06-025-0007-3	181

1. Narrative Conceptual Model

Sections I and II of the Demonstration provided a narrative conceptual model of the event and included characteristics of Imperial County, such as general description of the geography, topography, and meteorology, and a description and map of the ambient air quality monitoring network and meteorological sites (see Figure O.1).

Figure O.1: Monitoring Sites in Imperial County[312]

Sections I and II of the Demonstration further described the event-specific characteristics and included ICAPCD's conclusion that the exceedance measured at the Brawley monitoring station (Brawley) was caused by "[an] unseasonably strong Pacific weather system moved over southern California, southern Nevada, and western Arizona… [and] [t]he strong gusty westerly winds

[312] Demonstration, Section I

preceding the system generated emissions from within the open mountain ranges and surrounding open natural deserts within San Diego and Imperial counties,"[313] and that the exceedance qualifies as an exceptional event under the EER. ICAPCD summarized the event and included a table of hourly PM_{10} concentrations measured on October 5-7, 2018 at monitoring sites in Riverside, Imperial and Yuma counties, a 72-hour time-series of PM_{10} concentration profiles for monitoring sites in the area, two 72-hour time series of wind speed and wind gust measurements from select meteorological sites in the area, and 3:00 PM and 4:00 PM PST 12-hour NOAA Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) back trajectories from monitoring sites in the area.

Based on the information described above, ICAPCD's Demonstration satisfies the narrative conceptual model criterion of the EER.

Table O.2: Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
October 6, 2018	Sections I and II	Sufficient	Yes

2. Not Reasonably Controllable or Preventable (nRCP)

High wind threshold

ICAPCD provided documentation showing that sustained wind speeds associated with the event were above the EPA's 25 mph high wind threshold on October 6, 2018. For example, maximum sustained wind speeds of 31 mph with gusts of 41 mph were measured at the Imperial County Airport National Weather Service (NWS) station.

Identification of contributing sources

ICAPCD analysis shows satellite imagery and HYSPLIT back trajectories originating from the five PM_{10} monitoring sites in Imperial County.[314] The Demonstration states that "[a]s strong gusty westerly winds blew over open natural mountains and desert areas west of Imperial County, fugitive windblown dust primarily affected air quality monitors within the northern portion of Imperial County."[315]

Identification of reasonable controls

In Section V, ICAPCD provided detailed information on the current set of required controls in the Imperial County PM_{10} nonattainment area, including information on nonattainment status and a description and timeline of implementation of Regulation VIII, which includes Rules 800, 801, 802, 803, 804, 805, and 806. Regulation VIII was adopted by ICAPCD on October 16, 2012, and Rules 800, 804, 805 and 806 were approved by the EPA as Best Available Control Measure

[313] Demonstration, Section II
[314] Demonstration, Section II
[315] Demonstration, Section II

(BACM) level rules on April 22, 2013, with an effective date of May 22, 2013. Regulation VIII addresses the desert open areas managed by the Bureau of Land Management (BLM), U.S. Border Patrol, the California Department of Parks, and construction, open areas, track out, paved and unpaved roads, and agricultural operations.[316] ICAPCD also notes that "[b]oth permitted and non-permitted sources are required to comply with Regulation VIII requirements that address fugitive dust emissions."[317]

As identified above, the Demonstration states that the potential source area includes "open natural mountains and desert areas west of Imperial County."[318] This statement is supported by the HYSPLIT back trajectory analysis, which shows the trajectories passing through portions of San Diego County before continuing into Imperial County.[319] Based on a review of satellite imagery, this area appears to predominately natural desert that transitions to mountainous terrain over 3000 ft in elevation. San Diego County is currently a PM_{10} attainment area with no federally required PM_{10} SIP control measures. San Diego County does have local control measures that reduce PM (including PM_{10}) from sources such as: Rule 50 Visible Emissions, Rule 51 Nuisance, Rule 52 Particulate Matter, Rule 54 Dust and Fumes, Rule 55 Fugitive Dust Control, and Rule 101 Burning Control.

Evidence of effective implementation and enforcement

ICAPCD provided information on source-permitted inspections and public complaints that occurred during the event and stated in the Demonstration that "[a]n evaluation of all inspection reports, air quality complaints, compliance reports, and other documentation indicate no evidence of unusual anthropogenic-based PM_{10} emissions, officially declared as a No Burn Day, related to agricultural burning, waste burning or dust."[320]

Not reasonably preventable

While high wind dust events do not require a case-specific justification that the event was also not reasonably preventable,[321] ICAPCD's Demonstration discusses this criterion and states that "[t]he PM_{10} exceedance measured at the Brawley monitor was caused by naturally occurring gusty westerly winds that transported windblown dust into Imperial County and other parts of southern California from areas located within the Sonoran Desert regions to the west of Imperial County," and, therefore, a specific showing of the not reasonably preventable criterion is not required.[322]

EPA conclusion regarding nRCP criterion

Generally, State Implementation Plan (SIP) rules must be enforceable and must not relax existing requirements (see CAA sections 110(l) and 193). Rules implementing BACM and Best

[316] Demonstration, Section V
[317] Demonstration, Section V
[318] Demonstration, Section II
[319] Demonstration, Section II
[320] Demonstration, Section V
[321] 40 CFR part 50.14 (b)(5)(iv)
[322] Demonstration, Section VI

Available Control Technologies (BACT) are required in serious PM_{10} nonattainment areas (see CAA sections 189(a)(1) and 189(b)(1)). ICAPCD regulates a PM_{10} nonattainment area classified as serious (see 40 CFR part 81), so the applicable SIP should contain rules that implement BACM on contributing anthropogenic sources of windblown dust.

On July 8, 2010,[323] the EPA approved versions of the rules that comprise Regulation VIII, but required revisions to Rules 800, 804, 805, and 806. On April 22, 2013, the EPA fully approved these rule revisions into the California SIP. [324] The final rule also stated that the "EPA's preliminary view is that the Regulation VIII rules as revised in October 2012 constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the exceptional events rule, including reasonable and appropriate control measures on significant contributing anthropogenic sources."[325] The most recent BACM determinations for the rules are not within five years of the date of the event, but the EPA considers the controls to continue to constitute reasonable controls based on our review of analogous rules in other PM_{10} nonattainment areas and because the latest available emissions inventory information indicates that the significant source categories remain the same in Imperial County as they were when the BACM determinations were last made.[326]

The EPA also considers the control measures in place in San Diego County to be reasonable controls for this event based on San Diego's PM_{10} attainment status and the back-trajectory analysis showing the trajectory passing through a portion of San Diego County that appears to be predominately natural desert and mountainous areas with few sources of anthropogenic windblown dust. Therefore, the EPA is satisfied that the nRCP criterion of the EER is met.

Table O.3: Documentation of nRCP

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
October 6, 2018	Section II, V, and VI	Sufficient	Yes

3. Clear Causal Relationship (CCR)

Comparison with historical concentrations

In Section IV of the Demonstration, ICAPCD included a comparison with historical concentrations, as required by 40 CFR §50.14(c)(3)(iv)(C). In the Demonstration, ICAPCD compared the event-related PM_{10} concentrations with concentrations from 2010-2018 by highlighting the event day compared to routine data throughout the year and the season in which the exceedance occurred (October– December). The analysis also showed that the 24-hour PM_{10} concentration on the exceedance day was "outside the normal concentration levels when comparing to [sic] similar event days and non-event days."[327]

[323] 75 FR 39366
[324] 78 FR 23677
[325] 78 FR 23682
[326] TSD Addendum (December 2019); CARB, CEPAM: 2016 SIP – Standard Emission Tool, Emissions Projections for Imperial County, December 5, 2019.
[327] Demonstration, Section IV

Evidence of transport of high wind dust emissions from the source area to the monitor

In addition to analyses presented in Sections I and II, Section III of the Demonstration included: a "ramp-up" analysis of the event data that showed satellite imagery, general wind speed, gust, and direction in the upwind areas, locations of NWS advisories, and hourly PM_{10} concentrations measured at Imperial County monitoring sites; a 72-hour time series of PM_{10} concentrations measured at monitoring sites in Imperial County and visibility from regional NWS stations; tables of wind speed, gust, and direction measurements at selected meteorological sites in the area and PM_{10} concentrations from monitoring sites in Imperial County; and Air Quality Index (AQI) information.

Appendix A of the Demonstration included NWS urgent weather messages and advisories. Consistent with the discussion in Sections I, II, and III of the Demonstration, NWS Phoenix, AZ issued a wind advisory for southwest Imperial County and west Joshua Tree National Park at 1:33 PM on October 5, 2018, which was in effect from 8:00 PM on October 6, 2018 until 8:00 AM on October 7, 2018, and stated that "strong winds may blow down limbs, trees, and power lines…[and] [b]riefly [lower] visibilities to well under a mile at times in blowing dust or blowing sand."[328] The NWS San Diego, CA issued a wind advisory at 2:56 AM on October 6, 2018, for San Diego County deserts, Coachella Valley, and the San Gorgonio Pass, which was in effect from 5:00 PM on October 6, 2018, until 8:00 AM on October 7, 2018, and stated that "[v]isibility [c]ould be reduced to only 1 mile or less in areas of blowing dust and sand…[and] [s]trong winds will make travel difficult for high-profile vehicles."[329]

Appendix B of the Demonstration included Quality Controlled Local Climatological Data for NWS airport sites in Imperial, Riverside, San Diego, and Yuma counties. These data show the weather type of haze (HZ) observed at 19:28 hours at the Imperial County Airport NWS station.

Appendix C of the Demonstration included maps of public zones serviced by the NWS Phoenix and San Diego offices, weather story information from the San Diego and Phoenix NWS offices, AQI information, the Imperial County No Burn Day determination for October 6, 2018, and the public comment notice (affidavit).

In the Demonstration, ICAPCD concluded that "high gusty westerly winds transported fugitive emissions from open natural Mountain and desert areas, located within San Diego County and Imperial County (all part of the Sonoran Desert)."[330]

EPA conclusion regarding CCR criterion

The analyses included in the Demonstration, specifically, the evaluation of several years of PM_{10} monitoring data, numerous time-series graphs and tables of wind speed, wind gusts, wind direction, and hourly PM_{10} concentrations throughout Imperial County, the "ramp-up" analysis, NOAA HYSPLIT back trajectory analysis, NWS station reports of reduced visibility and haze,

[328] Demonstration, Appendix A
[329] Demonstration, Appendix A
[330] Demonstration, Section VI

and the issuance of NWS wind advisories sufficiently demonstrate that high wind speeds in upwind areas caused emissions from open natural mountains and desert areas and reasonably controlled local anthropogenic sources to the west of Brawley, which were transported to Brawley and caused an exceedance of the 24-hour PM_{10} NAAQS. Therefore, the Demonstration shows a clear causal relationship between the high wind dust event emissions and the exceedances measured at Brawley.

Table O.4: Documentation of CCR

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
October 6, 2018	Section I, II, III, IV, VI Appendices A, B, and C	Sufficient	Yes

4. Natural Event

ICAPCD stated in the Demonstration that "the PM_{10} exceedance that occurred at the Brawley monitor on October 6, 2018, was caused by the transport of windblown dust into Imperial County by gusty westerly winds associated with an unseasonably strong Pacific low-pressure system that moved over the region [and] [a]t the time of the event, anthropogenic sources, within Imperial County, were well controlled [and] [t]he event therefore qualifies as a natural event," and provided evidence that the emissions originated from open natural mountains and desert areas west of Brawley in Imperial and San Diego counties and that reasonable controls on contributing anthropogenic sources were in place at the time of the event.

Natural event conclusion

The CCR and nRCP analyses demonstrate that event-related emissions of windblown dust were from natural undisturbed lands and that upwind anthropogenic sources were subject to reasonable controls at the time of the event. Therefore, the EPA is satisfied that the high wind dust event met the definition of a natural event.

Table O.5: Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
October 6, 2018	Section I, II, III, IV, V, VI	Sufficient	Yes

5. Schedule and Procedural Requirements

In addition to technical Demonstration requirements, 40 CFR §50.14(c) and 40 CFR §51.930 specify schedule and procedural requirements an air agency must follow to request data exclusion. Table O.6 outlines the EPA's evaluation of these requirements.

Table O.6: Schedules and Procedural Criteria

Criterion	Reference	Demonstration Citation	Criterion Met?
Did the agency provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Sufficient	Yes
Did the agency submit an Initial Notification of Potential Exceptional Event and flag the affected data in the EPA's Air Quality System (AQS)?	40 CFR §50.14 (c)(2)(i)	Sufficient	Yes
If applicable, did the initial notification and demonstration submittals meet the deadlines for data influenced by exceptional events for use in initial area designations? Or the deadlines established by the EPA during the Initial Notification of Potential Exceptional Events process, if applicable?	40 CFR §50.14 Table 2 40 CFR §50.14 (c)(2)(i)(B)	Sufficient	Yes
Was the public comment process followed and documented? • Did the agency document that the comment period was open for a minimum of 30 days? • Did the agency submit to the EPA any public comments received? • Did the state address comments disputing or contradicting factual evidence provided in the demonstration?	40 CFR §50.14 (c)(3)(v)	Sufficient	Yes
Has the agency met requirements regarding submission of a mitigation plan, if applicable?	40 CFR §51.930 (b)	NA	NA

6. Conclusion

The EPA has reviewed the documentation provided by CARB and ICAPCD to support the conclusion that a high wind dust event caused an exceedance of the 24-hour PM_{10} NAAQS at Brawley on October 6, 2018. The EPA has determined that the flagged exceedance at this monitoring station on this day meets the definition of an exceptional event: the high wind dust event affected air quality in such a way that there exists a clear causal relationship between the event and the monitored exceedance, was not reasonably preventable or controllable, and meets the definition of a natural event. The EPA has also determined that CARB and ICAPCD have satisfied the schedule and procedural requirements for data exclusion.

P. Event Day: November 29, 2018

Table P.1: EPA 24-hour PM_{10} Exceedance Summary

Exceedance Date	Site Name	AQS ID	24-hour Average (µg/m³)
November 29, 2018	Niland	06-025-4004-3	331
November 29, 2018	Westmorland	06-025-4003-3	296

1. Narrative Conceptual Model

Sections I and II of the Demonstration provided a narrative conceptual model of the event and included characteristics of Imperial County, such as general description of the geography, topography, and meteorology, and a description and map of the ambient air quality monitoring network and meteorological sites (see Figure P.1).

Figure P.1: Monitoring Sites in Imperial County[331]

Sections I and II of the Demonstration further described the event-specific characteristics and included ICAPCD's conclusion that the exceedances measured at the Niland and Westmorland monitoring stations (Niland and Westmorland) were caused by "a forecasted cold, low-pressure

[331] Demonstration, Section I

trough [that] moved inland from the California coast and brought gusty westerly winds to southeastern California and western Arizona and] [t]he strong gusty westerly winds associated with the system generated emissions from within the open mountain ranges and surrounding open natural deserts within San Diego and Imperial Counties [and] [t]hese windblown dust emissions were transported to all the Imperial County regional air quality monitors,"[332] and that the exceedances qualify as an exceptional event under the EER. ICAPCD summarized the event and included a table of hourly PM_{10} concentrations measured on November 28-30 at monitoring sites in Riverside, Imperial and Yuma counties; a 72-hour time-series of PM_{10} concentration profiles for monitoring sites in the area; two 72-hour time series of wind speed and wind gust measurements from select meteorological sites in the area; an 8:00 AM and 12:00 PM 12-hour; and a 6:00 PM PST 24-hour NOAA Hybrid Single Particle Lagrangian Integrated Trajectory Model (HYSPLIT) back trajectories from monitoring sites in the area.

Based on the information described above, ICAPCD's Demonstration satisfies the narrative conceptual model criterion of the EER.

Table P.2: Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
November 29, 2018	Sections I and II	Sufficient	Yes

2. Not Reasonably Controllable or Preventable (nRCP)

High wind threshold

ICAPCD provided documentation showing that sustained wind speeds associated with the event were above the EPA's 25 mph high wind threshold on November 29, 2018. For example, maximum sustained wind speeds of 37 mph with gusts of 44 mph were measured at the El Centro NAF National Weather Service (NWS) station.

Identification of contributing sources

ICAPCD analysis shows satellite imagery and HYSPLIT back trajectories originating from the five PM_{10} monitoring sites in Imperial County.[333] The Demonstration states that "[a]s strong gusty southwest to west winds blew over open natural mountains and desert areas west of Imperial County, fugitive windblown dust significantly affected all air quality monitors within Imperial County." [334]

Identification of reasonable controls

In Section V, ICAPCD provided detailed information on the current set of required controls in the Imperial County PM_{10} nonattainment area, including information on nonattainment status and a description and timeline of implementation of Regulation VIII, which includes Rules 800, 801,

[332] Demonstration, Section II
[333] Demonstration, Section II
[334] Demonstration, Section II

802, 803, 804, 805, and 806. Regulation VIII was adopted by ICAPCD on October 16, 2012, and Rules 800, 804, 805 and 806 were approved by the EPA as Best Available Control Measure (BACM) level rules on April 22, 2013, with an effective date of May 22, 2013. Regulation VIII addresses the desert open areas managed by the Bureau of Land Management (BLM), U.S. Border Patrol, the California Department of Parks, and construction, open areas, track out, paved and unpaved roads, and agricultural operations.[335] ICAPCD also notes that "[b]oth permitted and non-permitted sources are required to comply with Regulation VIII requirements that address fugitive dust emissions."[336]

As identified above, the Demonstration states that the potential source area includes "open natural mountains and desert areas west of Imperial County."[337] This statement is supported by the HYSPLIT back trajectory analyses, which show the trajectories passing through portions of San Diego County, Riverside County and Mexico before continuing into Imperial County.[338] Based on a review of satellite imagery, this area appears to predominately natural desert that transitions to mountainous terrain over 3000 ft in elevation. San Diego County is currently a PM_{10} attainment area with no federally required PM_{10} SIP control measures. San Diego County does have local control measures that reduce PM (including PM_{10}) from sources such as: Rule 50 Visible Emissions, Rule 51 Nuisance, Rule 52 Particulate Matter, Rule 54 Dust and Fumes, Rule 55 Fugitive Dust Control, and Rule 101 Burning Control.

Riverside County can be divided into three areas according to the air basin each segment falls within: the western portion lies within the South Coast Air Basin (under South Coast Air Quality Management District's (SCAQMD) jurisdiction); the central portion, which is referred to as "Coachella Valley," lies within the Salton Sea Air Basin (also under SCAQMD jurisdiction); the eastern one-third lies within the Mojave Desert Air Basin and includes the Joshua Tree area (under SCAQMD jurisdiction) and the Palo Verde/Blythe area (under Mojave Desert Air Quality Management District's (MDAQMD) jurisdiction).[339]

The South Coast Air Basin portion of Riverside County is part of the larger former serious PM_{10} nonattainment area (encompassing all of the South Coast Air Basin) that EPA has redesignated to attainment.[340] Because the South Coast Air Basin had been a serious PM_{10} nonattainment area for which an attainment date extension had been granted under CAA section 188(e),[341] fugitive dust sources in that portion of Riverside County are subject to BACM and Most Stringent Measures (MSM) controls, including SCAQMD Rule 403 (Fugitive Dust) and SCAQMD Rule 1186 (PM_{10} Emissions from Paved and Unpaved Roads, and Livestock Operations). Rule 403 establishes best available fugitive dust control measures to reduce fugitive dust emissions associated with agricultural operations, construction/demolition activities, earth-moving activities, track out of bulk materials onto public paved roadways, and open storage piles or disturbed surface areas. Rule 1186 establishes controls to reduce dust from traffic on paved and

[335] Demonstration, Section V
[336] Demonstration, Section V
[337] Demonstration, Section II
[338] Demonstration, Section II
[339] CARB, California Almanac of Emissions and Air Quality - 2013 Edition, p. 1-4, 1-14 through 1-16; CARB figure titled "California Air Districts and Counties," available at https://ww3.arb.ca.gov/maps/adistbw.pdf; SCAQMD Rule 103 (Definition of Geographical Areas).
[340] 78 FR 20868, at 20875 (April 8, 2013) (proposed redesignation); 78 FR 38223 (June 26, 2013) (final redesignation).
[341] 68 FR 19316

unpaved roads, including requirements for purchase of PM_{10} efficient street sweepers; removal of material on roadways; curbing; treatment of medians; and paving, stabilization or speed restrictions for unpaved roads. The PM_{10} maintenance plan for the South Coast Air Basin relies upon the continued implementation of the BACM controls, including Rules 403 and 1186.

The Coachella Valley portion of Riverside County has not been redesignated and is currently a serious PM_{10} nonattainment area for which an attainment date extension has been granted under CAA section 188(e).[342] Fugitive dust sources in Coachella Valley are subject to BACM/MSM measures, including SCAQMD Rules 403 and 1186 (described above) and SCAQMD Rule 403.1 (Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources) and dust ordinances adopted by the various cities in Coachella Valley and by Riverside County. Rule 403.1 includes especially stringent provisions for implementation when wind speeds exceed 25 mph, and the rule also serves as a backstop for local jurisdictions' enforcement of their fugitive dust ordinances. The local dust ordinances are based on a model fugitive dust control ordinance developed by the Coachella Valley Association of Governments (CVAG), local governments and the SCAQMD. The ordinances typically require dust control plans for each construction project needing a grading permit; plans to pave or chemically treat unpaved surfaces if daily vehicle trips exceed 150; imposition of 15 mph speed limits for unpaved surfaces if daily vehicle trips do not exceed 150; paving or chemical treatment of unpaved parking lots; and actions to discourage use of unimproved property by off-highway vehicles.

The eastern portion of Riverside County is currently designated as unclassifiable for the PM_{10} NAAQS and, as such, is not subject to federally required PM_{10} SIP control measures. However, the control measures required under SCAQMD Rules 403 and 1186, described above, apply within the Joshua Tree area because the Joshua Tree area lies within SCAQMD jurisdiction. The Palo Verde area is subject to MDAQMD jurisdiction, and fugitive dust sources in that area are subject to controls under Mojave Desert AQMP fugitive dust rules including Rules 401 (Visible Emissions) and 403 (Fugitive Dust).

An assessment of reasonable controls in northern Mexico is not required, as sources in Mexico are not within ICAPCD's or CARB's jurisdictional boundaries.[343]

Evidence of effective implementation and enforcement

ICAPCD provided information on source-permitted inspections and public complaints that occurred during the event and stated in the Demonstration that it evaluated inspection reports, air quality complaints, compliance reports, and other documentation and found no evidence of unusual anthropogenic-based PM_{10} emissions. ICAPCD also stated that "[t]here were no complaints filed on November 29, 2018, officially declared as No Burn Day, related to agricultural burning, waste burning or dust."[344]

[342] 68 FR 19318
[343] 40 CFR part 50.14 (b)(8)(vii)
[344] Demonstration, Section V

Not reasonably preventable

While high wind dust events do not require a case-specific justification that the event was also not reasonably preventable,[345] ICAPCD's Demonstration discusses this criterion and states that "[t]he PM_{10} exceedance[s] measured at the Niland and Westmorland monitors were caused by naturally occurring strong gusty westerly winds that transported windblown dust into Imperial County and other parts of southern California from areas located within the Sonoran Desert regions to the west of Imperial County" and, therefore, a specific showing of the not reasonably preventable criterion is not required.[346]

EPA conclusion regarding nRCP criterion

Generally, State Implementation Plan (SIP) rules must be enforceable and must not relax existing requirements (see CAA sections 110(l) and 193). Rules implementing BACM and Best Available Control Technologies (BACT) are required in serious PM_{10} nonattainment areas (see CAA sections 189(a)(1) and 189(b)(1)). ICAPCD regulates a PM_{10} nonattainment area classified as serious (see 40 CFR part 81), so the applicable SIP should contain rules that implement BACM on contributing anthropogenic sources of windblown dust.

On July 8, 2010,[347] the EPA approved versions of the rules that comprise Regulation VIII, but required revisions to Rules 800, 804, 805, and 806. On April 22, 2013, the EPA fully approved these rule revisions into the California SIP. [348] The final rule also stated that the "EPA's preliminary view is that the Regulation VIII rules as revised in October 2012 constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the exceptional events rule, including reasonable and appropriate control measures on significant contributing anthropogenic sources."[349] The most recent BACM determinations for the rules are not within five years of the date of the event, but the EPA considers the controls to continue to constitute reasonable controls based on our review of analogous rules in other PM_{10} nonattainment areas and because the latest available emissions inventory information indicates that the significant source categories remain the same in Imperial County as they were when the BACM determinations were last made.[350]

In addition to our review of nRCP for Imperial County, the EPA also reviewed the nRCP criterion for sources within Riverside County, because back-trajectory analyses show trajectories passing through Riverside County. The EPA considers the control measures in place in Riverside County to be reasonable controls for this event based on (i) the implementation of SCAQMD BACM/MSM controls for fugitive dust sources in the Coachella Valley serious PM_{10}

[345] 40 CFR part 50.14 (b)(5)(iv)
[346] Demonstration, Section VI
[347] 75 FR 39366
[348] 78 FR 23677
[349] 78 FR 23682
[350] TSD Addendum (December 2019); CARB, CEPAM: 2016 SIP – Standard Emission Tool, Emissions Projections for Imperial County, December 5, 2019.

nonattainment area, and (ii) the implementation of SCAQMD and Mojave Desert fugitive dust controls in the unclassifiable portion of Riverside County.

The most recent BACM/MSM determinations for SCAQMD Rules 403, 403.1 and 1186, and the local dust ordinances vary from 2005 (for Rules 403.1 and the local dust ordinances) to 2008 (Rule 403) to 2012 (Rule 1186).[351] Although the most recent BACM/MSM determinations for the rules and ordinances are not within five years of the date of the event, the EPA considers these controls to continue to constitute reasonable controls based on our review of analogous rules in other PM_{10} nonattainment areas and because the latest available emissions inventory information indicates that the significant source categories remain the same in Coachella Valley as they were when the BACM determinations were last made.[352]

The EPA also considers the control measures in place in San Diego County to be reasonable controls for this event based on San Diego's PM_{10} attainment status and the back-trajectory analysis showing the trajectory passing through a portion of San Diego County that appears to be predominately natural desert and mountainous areas with few sources of anthropogenic windblown dust.

Therefore, the EPA is satisfied that the nRCP criterion of the EER is met.

Table P.3: Documentation of nRCP

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
November 29, 2018	Section II, V, and VI	Sufficient	Yes

3. Clear Causal Relationship (CCR)

Comparison with historical concentrations

In Section IV of the Demonstration, ICAPCD included a comparison with historical concentrations, as required by 40 CFR §50.14(c)(3)(iv)(C). In the Demonstration, ICAPCD compared the event-related PM_{10} concentrations with concentrations from 2010-2018 by highlighting the event day compared to routine data throughout the year and the season in which the exceedances occurred (October - December). The analysis also showed that the 24-hour PM_{10} concentrations on the exceedance day were "clearly outside the normal concentration levels when comparing to similar event days and non-event days."[353]

Evidence of transport of high wind dust emissions from the source area to the monitor

In addition to analyses presented in Sections I and II, Section III of the Demonstration included: a "ramp-up" analysis of the event data that showed satellite imagery, general wind speed, gust,

[351] 70 FR 43663 (July 25, 2005) and 70 FR 69081 (November 14, 2005) (proposed and final approval of amendments to the PM_{10} SIPs for the South Coast and Coachella Valley and revisions to Rule 403.1 and the local dust ordinances); 73 FR 12639 (March 10, 2008) (final approval of revisions to Rule 403); and 77 FR 13495 (March 7, 2012) (final approval of revisions to Rule 1186).
[352] TSD Addendum (December 2019); CARB, CEPAM: 2016 SIP – Standard Emission Tool, Emissions Projections for Riverside County, September 6, 2019.
[353] Demonstration, Section IV

and direction in the upwind areas, locations of NWS advisories, and hourly PM_{10} concentrations measured at Brawley, Calexico, El Centro, Niland and Westmorland; a 72-hour time series of PM_{10} concentrations measured at monitoring sites in Imperial County and visibility from regional NWS stations; tables of wind speed, gust, and direction measurements at selected meteorological sites in the area and PM_{10} concentrations from monitoring sites in Imperial County, and Air Quality Index (AQI) information.

Appendix A of the Demonstration included NWS urgent weather messages and advisories. Consistent with the discussion in Sections I, II, and III of the Demonstration, NWS San Diego, CA issued a wind advisory for the San Diego mountains and deserts at 3:34 AM PST on November 28, 2018, which was in effect from 6:00 AM PST on November 29, 2018, until 6:00 AM PST on November 30, 2018, and stated that "[a]reas of south to southwest winds 25 to 35 mph with gusts to 55 mph, becoming westerly on Thursday afternoon and diminishing late Thursday night. Isolated gusts to 65 mph are possible." NWS Phoenix, AZ issued a wind advisory for southwest Imperial County at 3:45 PM PST on November 28, 2018, which was in effect from 6:00 AM PST on November 29, 2018, until 6:00 AM PST on November 30, 2018, and stated that there will be "southwest 25 to 35 mph [winds] with gusts up to 50 mph."

Appendix B of the Demonstration included Quality Controlled Local Climatological Data for NWS airport sites in Imperial, Riverside, San Diego, CA and Yuma, AZ, counties. These data show weather types of haze (HZ) and blowing dust (BLDU) observed at 14:49 and 15:12 hours on November 29, 2018 at the El Centro NAF NWS station, and HZ was observed from 15:05 to 15:38 at the Imperial County NWS station.

Appendix C of the Demonstration included weather story information from the San Diego and Phoenix NWS offices, AQI information, the Imperial County No Burn Day determination for November 29, 2018, and the public comment notice (affidavit).

In the Demonstration, ICAPCD concluded that "high gusty westerly winds transported fugitive emissions from open natural Mountain and desert areas, located within the San Diego, Riverside and Imperial counties (all part of the Sonoran Desert)."[354]

EPA conclusion regarding CCR criterion

The analyses included in the Demonstration, specifically, the evaluation of several years of PM_{10} monitoring data, numerous time-series graphs and tables of wind speed, wind gusts, wind direction, and hourly PM_{10} concentrations throughout Imperial County, the "ramp-up" analysis, NOAA HYSPLIT back trajectory analysis, NWS station reports of reduced visibility, blowing dust and haze, and the issuance of a NWS wind advisories sufficiently demonstrate that high wind speeds in upwind areas caused emissions from natural desert areas and reasonably controlled local anthropogenic sources to the southwest and west of Niland and Westmorland, which were transported to Niland and Westmorland and caused exceedances of the 24-hour PM_{10} NAAQS. Therefore, the Demonstration shows a clear causal relationship between the high wind dust event emissions and the exceedances measured at Niland and Westmorland.

[354] Demonstration, Section VI

Table P.4: Documentation of CCR

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
November 29, 2018	Section I, II, III, IV, VI Appendices A, B, and C	Sufficient	Yes

4. Natural Event

ICAPCD stated in the Demonstration that "the PM_{10} exceedance that occurred at Niland and Westmorland on November 29, 2018, was caused by the transport of windblown dust into Imperial County by strong westerly winds associated with a storm that passed through the region [and] [a]t the time of the event, anthropogenic sources, within Imperial County were reasonably controlled [and] [t]he event therefore qualifies as a natural event,"[355] and provided evidence that the emissions originated open natural mountains and desert areas west of Imperial County and that reasonable controls on contributing anthropogenic sources were in place at the time of the event.

Natural event conclusion

The CCR and nRCP analyses demonstrate that event-related emissions of windblown dust were from natural undisturbed lands and that upwind anthropogenic sources were subject to reasonable controls at the time of the event. Therefore, the EPA is satisfied that the high wind dust event met the definition of a natural event.

Table P.5: Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
November 29, 2018	Section I, II, III, IV, V, VI	Sufficient	Yes

5. Schedule and Procedural Requirements

In addition to technical Demonstration requirements, 40 CFR §50.14(c) and 40 CFR §51.930 specify schedule and procedural requirements an air agency must follow to request data exclusion. Table P.6 outlines the EPA's evaluation of these requirements.

Table P.6: Schedules and Procedural Criteria

Criterion	Reference	Demonstration Citation	Criterion Met?
Did the agency provide prompt public notification of the event?	40 CFR §50.14 (c)(1)(i)	Sufficient	Yes
Did the agency submit an Initial Notification of Potential Exceptional Event and flag the affected data in the EPA's Air Quality System (AQS)?	40 CFR §50.14 (c)(2)(i)	Sufficient	Yes

[355] Demonstration, Section VI

Criterion	Reference	Demonstration Citation	Criterion Met?
If applicable, did the initial notification and demonstration submittals meet the deadlines for data influenced by exceptional events for use in initial area designations? Or the deadlines established by the EPA during the Initial Notification of Potential Exceptional Events process, if applicable?	40 CFR §50.14 Table 2 40 CFR §50.14 (c)(2)(i)(B)	Sufficient	Yes
Was the public comment process followed and documented? • Did the agency document that the comment period was open for a minimum of 30 days? • Did the agency submit to the EPA any public comments received? • Did the state address comments disputing or contradicting factual evidence provided in the demonstration?	40 CFR §50.14 (c)(3)(v)	Sufficient	Yes
Has the agency met requirements regarding submission of a mitigation plan, if applicable?	40 CFR §51.930 (b)	NA	NA

6. Conclusion

The EPA has reviewed the documentation provided by CARB and ICAPCD to support the conclusion that a high wind dust event caused exceedances of the 24-hour PM_{10} NAAQS at Niland and Westmorland on November 29, 2018. The EPA has determined that the flagged exceedances at these monitoring stations on this day meet the definition of an exceptional event: the high wind dust event affected air quality in such a way that there exists a clear causal relationship between the event and the monitored exceedances, was not reasonably preventable or controllable, and meets the definition of a natural event. The EPA has also determined that CARB and ICAPCD have satisfied the schedule and procedural requirements for data exclusion.

TECHNICAL SUPPORT DOCUMENT ADDENDUM
December 2019
Prepared by EPA Region IX Air and Radiation Division and Office of Regional Counsel

I. Regulatory Background

A. Exceptional Events Rule

Under Clean Air Act (CAA) section 319(b) ("Air Quality Monitoring Data Influenced by Exceptional Events"), an "exceptional event" is defined as an event that (i) affects air quality; (ii) is not reasonably controllable or preventable; (iii) is an event caused by human activity that is unlikely to recur at a particular location or a natural event; and (iv) is determined by the U.S. Environmental Protection Agency (EPA or "Agency") through the process established in the EPA's regulations to be an exceptional event.

Under the EPA's Exceptional Events Rule (EER), promulgated at 40 CFR 50.14, the EPA shall exclude data from use in determinations of exceedances and violations where a state demonstrates to the EPA's satisfaction that an exceptional event caused a specific air pollution concentration at a particular air quality monitoring location and otherwise satisfies the requirements of the EER.[1] With respect to high wind dust events, the EPA shall exclude data from use in determinations of exceedances and violations, where a state demonstrates to the EPA's satisfaction that emissions from a high wind dust event caused a specific air pollution concentration in excess of one or more national ambient air quality standard (NAAQS) at a particular air quality monitoring location and otherwise satisfies the requirements of the EER provided that such emissions are from high wind dust events.[2]

Under the EER, the EPA considers high wind dust events to be natural events in cases where windblown dust is entirely from natural undisturbed lands in the area or where all anthropogenic sources are reasonably controlled.[3] The EPA determines that an event is not reasonably controllable if the state shows that reasonable measures to control the impact of the event on air quality were applied at the time of the event and assesses the reasonableness of available controls for anthropogenic sources based on information available as of the date of the event.[4] Except where a state, tribal or federal air agency is obligated to revise its state implementation plan (SIP), tribal implementation plan (TIP), or federal implementation plan (FIP), the EPA considers enforceable control measures implemented in accordance with a SIP, TIP or FIP, approved by the EPA within five years of the date of the event, that address the event-related pollutant and all sources necessary to fulfill the requirement of the CAA for the SIP, TIP or FIP to be reasonable controls with respect to all anthropogenic sources that have, or may have contributed to the monitored exceedance or violation.[5]

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[1] 40 CFR 50.14(b)(1).
[2] 40 CFR 50.14(b)(5)(i).
[3] 40 CFR 50.14(b)(5)(ii).
[4] 40 CFR 50.14(b)(8)(iii) and (iv).
[5] 40 CFR 50.14(b)(8)(v).

B. Coachella Valley

High winds often contribute to elevated ambient concentrations of particulate matter less than 10 microns in diameter (PM_{10}) measured at state and local air monitoring sites (SLAMS) in Imperial County. Under certain conditions, high winds transport PM_{10} from fugitive dust sources in Coachella Valley to Imperial Valley and impact concentrations measured there.

Coachella Valley, which covers the central portion of Riverside County, is a Serious PM_{10} nonattainment area.[6] As such, Coachella Valley is subject to CAA section 189(b)(1)(B), which requires revisions to the SIP that include provisions to assure implementation of best available control measures (BACM) for the control of PM_{10}.

Implementation of BACM in Coachella Valley has been carried out through fugitive rules adopted and enforced by the South Coast Air Quality Management District (SCAQMD), specifically, Rules 403 ("Fugitive Dust"), 403.1 (now titled "Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources") and 1186 ("PM_{10} Emissions from Paved and Unpaved Roads, and Livestock Operations"), and through dust control ordinances adopted and enforced by local jurisdictions in the Valley. In 2003, the EPA approved the SCAQMD fugitive dust rules and local ordinances as meeting the BACM requirement within Coachella Valley.[7] In 2005, the EPA approved revisions to the SCAQMD rules and local ordinances that were intended to strengthen the requirements to make them more effective and determined once again that they meet the BACM requirement.[8] In 2008 and 2012, we approved revisions to SCAQMD Rules 403 and 1186, respectively, and in doing so, determined that they continued to meet BACM requirements.[9]

The PM_{10} exceedances measured at Imperial County SLAMS that are evaluated in the concurrence packages and the EPA's corresponding technical support documents (TSDs) occurred within the period 2014-2018. Because, with the limited exception of SCAQMD Rule 1186, the approved BACM determinations for the rules and ordinances controlling PM_{10} in Coachella Valley are more than five years old, the presumption of reasonableness found in 40 CFR 50.14(b)(8)(v) does not apply. In this TSD Addendum, we evaluate the applicable SCAQMD fugitive dust rules and local ordinances to determine whether the rules and ordinances continue to represent reasonable controls for the purposes of the EER. We do so through a comparison of the requirements applicable within Coachella Valley with the corresponding requirements from other Serious PM_{10} nonattainment areas. See Section II.B, below.

[6] 40 CFR 81.305.
[7] 68 FR 19318 (April 18, 2003) (final approval of 2002 Coachella Valley PM_{10} SIP).
[8] 70 FR 69081 (November 14, 2005) (final approval of the revisions to Coachella Valley PM_{10} SIP and related fugitive dust rules and ordinances).
[9] 73 FR 12639 (March 10, 2008) (final approval of revisions to SCAQMD Rule 403); 77 FR 13495 (March 7, 2012) (final approval of revisions to SCAQMD Rule 1186).

C. Imperial Valley

Fugitive dust sources located within Imperial County contribute to ambient PM_{10} concentrations measured at SLAMS in Imperial County during high wind events. The Imperial Valley Planning Area ("Imperial Valley"), which covers the western and central portions of Imperial County, is a Serious PM_{10} nonattainment area.[10] As such, like Coachella Valley, the Imperial Valley is subject to CAA section 189(b)(1)(B), which requires SIP revisions that include provisions to assure implementation of BACM for the control of PM_{10}.

Implementation of BACM in Imperial Valley has been carried out through the fugitive dust regulation adopted and enforced by the Imperial County Air Pollution Control District (ICAPCD), specifically, Regulation VIII ("Fugitive Dust Rules"). Regulation VIII is divided into seven rules: Rule 800 ("General Requirements for Control of Fine Particulate Matter (PM-10)"), Rule 801 ("Construction and Earthmoving Activities"), Rule 802 ("Bulk Materials"), Rule 803 ("Carry-Out and Track-Out"), Rule 804 ("Open Areas"), Rule 805 ("Paved and Unpaved Roads") and Rule 806 ("Conservation Management Practices"). In 2013, the EPA approved the Regulation VIII rules as providing BACM-level of control of the applicable fugitive dust sources within Imperial Valley.[11] In the EPA's 2013 final rule, the Agency expressed its preliminary view that the Regulation VIII rules, as revised in October 2012 (and approved in April 2013), constitute reasonable control of the sources covered by Regulation VIII for the purpose of evaluating whether an exceedance of the PM_{10} NAAQS is an exceptional event pursuant to the EER, including reasonable and appropriate control measures on significant contributing anthropogenic sources.[12]

The PM_{10} exceedances measured at SLAMS within Imperial County that are evaluated in the concurrence packages and the EPA's corresponding TSD occurred within the period 2014-2018. Because the approved BACM determinations for Regulation VIII controlling PM_{10} in Imperial Valley are more than five years old with respect to PM_{10} exceedances occurring after early 2018, the presumption of reasonableness found in 40 CFR 50.14(b)(8)(v) does not apply to those events. In this TSD Addendum, we evaluate the applicable ICAPCD fugitive dust rules to determine whether the rules continue to represent reasonable controls for the purposes of the EER. We do so through a comparison of the ICAPCD rule requirements with the corresponding requirements from other Serious PM_{10} nonattainment areas. See Section II.C, below.

[10] 40 CFR 81.305.
[11] 78 FR 23677 (April 22, 2013) (final approval of amended ICAPCD Rules 800, 804, 805 and 806). EPA approval of Rules 801, 802 and 803 was published at 75 FR 39366 (July 8, 2010).
[12] Id, at 23682.

II. Comparison of BACM Measures in Coachella Valley and Imperial Valley with BACM Measures in Analogous PM_{10} Air Quality Planning Areas

A. General

As noted above, for this analysis, we have evaluated the requirements in the fugitive dust rules and local dust ordinances that control PM_{10} emissions in Coachella Valley and Imperial Valley with analogous rules from other Serious PM_{10} nonattainment areas.

The other Serious PM_{10} nonattainment areas include the following: the South Coast Air Basin, San Joaquin Valley, Las Vegas Valley, and the Phoenix Planning Area. The South Coast Air Basin, San Joaquin Valley and Las Vegas Valley were formerly designated Serious PM_{10} nonattainment areas but have been redesignated to attainment.[13] The Phoenix Planning Area remains designated Serious nonattainment for the PM_{10} NAAQS.[14] These particular areas were selected for comparison because ambient PM_{10} concentrations in these areas are heavily influenced by the same types of anthropogenic sources (i.e., primarily fugitive sources associated with unpaved roads, disturbed open areas and agricultural sources) as those located in Coachella Valley and Imperial Valley, and because these areas share certain similar meteorological conditions.

The source categories used for comparison purposes include the more significant source categories in Coachella Valley and Imperial Valley – construction/ earth movement, bulk materials, carry-out and track-out, open areas, paved and unpaved roads, and agricultural sources. For this analysis, the EPA has reviewed the relevant fugitive dust regulations adopted by the relevant air districts or local jurisdictions and has compiled a table (Table 1) that allows for comparison of the regulations with respect to applicability and control requirements for each of the source categories. Table 1 is organized with separate subparts in the following order: construction/ earth movement, bulk materials, carry-out and track-out, open areas, paved and unpaved roads, and agricultural sources.

B. Coachella Valley

1. Construction / Earth Movement

SCAQMD Rules 403 and 403.1 establish performance standards that prohibit visible dust emissions from crossing any property line or exceeding 20% opacity and that prohibit increases in PM_{10} levels > 50 micrograms per cubic meter ($\mu g/m^3$) relative to upwind concentrations.

The performance standards do not apply when wind gusts are > 25 miles per hour (mph) provided that certain control measures are implemented:

- Earthmoving (cease active operations or pre-water > 15 minutes);

[13] 78 FR 38223 (June 26, 2013) (final redesignation of South Coast to attainment for the PM_{10} NAAQS); 73 FR 66759 (November 12, 2008) (final redesignation of San Joaquin Valley to attainment for the PM_{10} NAAQS); 79 FR 60078 (October 6, 2014) (final redesignation of Las Vegas Valley to attainment for the PM_{10} NAAQS).
[14] See 40 CFR 81.303.

- Disturbed surface areas (apply chemical stabilizers, increase watering);
- Unpaved roads (apply chemical stabilizers, apply water or stop all vehicular traffic);
- Open storage piles (apply water, install temporary coverings);
- Paved road track-out (cover all haul trucks or maintain appropriate freeboard.

In Coachella Valley, exemptions from the performance standards require documentation of wind speeds greater than 25 mph. Different control requirements and techniques are required for different types of activities, as follows:

- Backfilling (stabilize backfill materials when not actively handling, stabilize backfill materials during handling, and stabilize soil at completion of activity).
- Clearing and Grubbing (maintain stability of soil through pre-watering of site prior to clearing and grubbing, stabilize soil during clearing and grubbing activities, stabilize soils immediately after clearing and grubbing activities).
- Clearing Forms (use water spray to clear forms, or use sweeping and water spray to clear forms, or use vacuum systems to clear forms).
- Crushing (stabilize surface soils prior to operation of support equipment and stabilize material after crushing).
- Cut and Fill (pre-water soils prior to cut and fill activities and stabilize soil during and after cut and fill activities).
- Demolition – Mechanical/Manual (stabilize wind erodible surfaces, stabilize surface soils where support equipment and vehicles will operate, stabilize loose soils and demolition debris).
- Earthmoving Activities (pre-apply water to depth of proposed cuts, re-apply water to maintain damp soils and to ensure that visible emissions < 100 feet in any direction, and stabilize soils once earthmoving activities are complete).
- Landscaping (stabilize soils, materials, slopes).
- Trenching (stabilize surface soils where trencher and support equipment will operate and stabilize soils at the completion of trenching activities).
- Turf Overseeding (apply sufficient water immediately prior to conducting turf vacuuming activities, and cover haul vehicles prior to exiting the site).

Additional requirements apply to large operations (greater than 10 acres) with respect to certain activities or phases:

- Earth-movement (project phasing to reduce extent of disturbed surface at any given time), pre-watering (72 hours), watering during earth-movement activities, perimeter controls, site stabilization.

In Coachella Valley, the requirements under local ordinances can substitute for certain requirements that would otherwise apply under SCAQMD Rules 403 and 403.1. Under the local ordinances, any operator on a site with a disturbed surface area > 1 acre must operate a water application system, if watering is the selected control measure, and an operator applying for a grading permit, or a building permit for an activity with a disturbed area > 5,000 square feet (sq. ft.), must have an approved Fugitive Dust Control Plan for initiating any earth-moving operations.

In addition, any operator involved in earth-moving operations must implement at least one of the following short-term stabilization methods during non-working hours: maintain soils in a damp condition by sight or touch; establish a stabilized surface through watering; or apply a chemical dust suppressant to maintain a stabilized surface. Within 10 days of ceasing activity, the ordinances require implementation of one of the following long-term stabilization techniques for any disturbed surface with no activity for at least 30 days: revegetation with 75% ground coverage with an active watering system; watering with physical access restriction surrounding the area; or use of chemical stabilizers.

Table 1 provides the basis to compare the fugitive dust rules applicable in Coachella Valley with the corresponding rules in five other areas that are either Serious PM_{10} nonattainment area or that were Serious PM_{10} nonattainment areas but that have been redesignated to attainment. Based on a review of the information in Table 1, the EPA finds that the requirements that apply to the construction/earth movement source category in Coachella Valley are generally as stringent as they are in the other areas. For instance, all the districts have established a 20% opacity limit as a performance standard for fugitive dust emissions from this source category. The specific control techniques that are required in Coachella Valley are generally similar to those required in other areas (watering, chemical stabilization, phasing, etc.). As such, the EPA concludes that the requirements that apply to the construction/earth movement source category in Coachella Valley represent reasonable controls for the purposes of the EER.

2. Bulk Materials

SCAQMD Rules 403 and 403.1 establish performance standards that prohibit visible dust emissions from crossing any property line or exceeding 20% opacity and that prohibit increases in PM_{10} levels > 50 $\mu g/m^3$ relative to upwind concentrations.

The performance standards do not apply when wind gusts are > 25 mph provided that certain control measures are implemented:

- Earthmoving (cease active operations or pre-water > 15 minutes);
- Disturbed surface areas (apply chemical stabilizers, increase watering);
- Unpaved roads (apply chemical stabilizers, apply water or stop all vehicular traffic);
- Open storage piles (apply water, install temporary coverings);
- Paved road track-out (cover all haul trucks or maintain appropriate freeboard.

In Coachella Valley, exemptions from the performance standards require documentation of wind speeds greater than 25 mph.

Under Rule 403, control measure requirements include:

- Importing/Exporting of Bulk Materials (stabilize material while loading to reduce fugitive dust emissions, maintain > 6 inches freeboard on haul vehicles, stabilize material while transporting, stabilize material while unloading).
- Screening (pre-water prior to screening, limit fugitive dust emissions to opacity and plume length standards, and stabilize material immediately after screening).

- Stockpiles/Bulk Material Handling (stabilize stockpiled materials, stockpiles < 100 yards of off-site occupied buildings must be < 8 feet in height, or must have a road bladed to top to allow water truck access or have water irrigation system).
- Truck Loading (pre-water material prior to loading and ensure > 6 inches freeboard).

For large operations (active operations > 10 acres of disturbed surface area as set forth in the Rule 403.1 Handbook):

- Open storage piles (apply chemical stabilizer, or apply water to > 80% of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust, or install temporary coverings, or install a 3-sided enclosure meeting certain specifications).
- Storage piles/bulk material handling (wind sheltering, storage pile stabilization, material handling).

Rule 403.1 also requires that:

- New man-made bulk material deposits in the Coachella Valley Blowsand Zone must be stabilized within 24 hours by: application of water to at least 70% of the surface area of any bulk material deposits at least 3 times for each day there is evidence of wind driven fugitive dust; or application of chemical stabilizers in sufficient concentration to maintain a stabilized surface for a period of at least 6 months; or installation of wind breaks of such design so as to reduce maximum wind gusts to less than 25 mph in the area of the bulk material deposits.
- Any person involved in active operations in the Coachella Valley Blowsand Zone must stabilize new deposits of bulk material originating from off-site undisturbed natural desert areas within 72 hours by: application of water to at least 70% of the surface area at least 3 times for each day there is evidence of wind driven fugitive dust; or application of chemical stabilizers in sufficient concentration to maintain a stabilized surface for a period of at least 6 months.

Table 1 provides the basis to compare the fugitive dust rules applicable in Coachella Valley with the corresponding rules in five other areas that are either Serious PM_{10} nonattainment area or that were Serious PM_{10} nonattainment areas but that have been redesignated to attainment. Based on a review of the information in Table 1, the EPA finds that the requirements that apply to the bulk materials source category in Coachella Valley are generally as stringent as they are in the other areas. Like Coachella Valley, most of the other areas are subject to a 20% opacity limit as a performance standard for fugitive dust emissions from this source category. The specific control techniques that are required in Coachella Valley are generally similar to those required in other areas. Different techniques apply to different aspects of bulk material storage loading/unloading, hauling and storage, and include watering, chemical stabilization, maintaining space (freeboard) between the side of the haul truck and the height of the material, regular checks of trucks to minimize spills, limits to heights of piles of bulk materials, among others. As such, the EPA concludes that the requirements that apply to the bulk materials source category in Coachella Valley represent reasonable controls for the purposes of the EER.

3. Carry-Out and Track-Out

SCAQMD Rules 403 and 403.1 establish performance standards that prohibit visible dust emissions from crossing any property line or exceeding 20% opacity and that prohibit increases in PM_{10} levels > 50 $\mu g/m^3$ relative to upwind concentrations.

The performance standards do not apply when wind gusts are > 25 mph provided that certain control measures are implemented:

- Earthmoving (cease active operations or pre-water > 15 minutes);
- Disturbed surface areas (apply chemical stabilizers, increase watering);
- Unpaved roads (apply chemical stabilizers, apply water or stop all vehicular traffic);
- Open storage piles (apply water, install temporary coverings);
- Paved road track-out (cover all haul trucks or maintain appropriate freeboard.

In Coachella Valley, exemptions from the performance standards require documentation of wind speeds greater than 25 mph.

Control measure requirements include:

- Importing/Exporting of Bulk Materials (stabilize material while loading to reduce fugitive dust emissions, maintain > 6 inches freeboard on haul vehicles, stabilize material while transporting, stabilize material while unloading).

In addition, track-out must not extend 25 feet or more in cumulative length from the point of origin from an active operation, and all track-out must be removed at the conclusion of each workday. For larger active operations (disturbed surface area > 5 acres, or with a daily import of > 100 cubic yards of bulk material), one of the following measures must be implemented at each egress from the site to a paved public road:

- Install and maintain a washed gravel pad;
- Pave 100-foot approach (> 20 feet wide);
- Utilize a wheel shaker/wheel spreading device consisting of raised dividers;
- Install and utilize a wheel washing system.

Table 1 provides the basis to compare the fugitive dust rules applicable in Coachella Valley with the corresponding rules in five other areas that are either Serious PM_{10} nonattainment area or that were Serious PM_{10} nonattainment areas but that have been redesignated to attainment. Based on a review of the information in Table 1, the EPA finds that the requirements that apply to the carry-out and track-out source category in Coachella Valley are generally as stringent as they are in the other areas. The specific control techniques that are required in Coachella Valley are generally similar to those required in other areas. Different techniques apply to different aspects of carry-out and track-out and include prevention of spills, installation of paved or graveled surfaces (or wheel washing systems) adjacent to paved roads, and schedules for cleanup of track out at the end of workdays, among others. As such, the EPA concludes that the requirements that apply to the carry-out and track-out source category in Coachella Valley represent reasonable controls for the purposes of the EER.

4. Open Areas

SCAQMD Rules 403 and 403.1 establish performance standards that prohibit visible dust emissions from crossing any property line or exceeding 20% opacity and that prohibit increases in PM_{10} levels > 50 $\mu g/m^3$ relative to upwind concentrations.

The performance standards do not apply when wind gusts are > 25 mph provided that certain control measures are implemented:

- Earthmoving (cease active operations or pre-water > 15 minutes);
- Disturbed surface areas (apply chemical stabilizers, increase watering);
- Unpaved roads (apply chemical stabilizers, apply water or stop all vehicular traffic);
- Open storage piles (apply water, install temporary coverings);
- Paved road track-out (cover all haul trucks or maintain appropriate freeboard.

In Coachella Valley, exemptions from the performance standards require documentation of wind speeds greater than 25 mph.

Under Rule 403, control measure requirements include:

- Disturbed Soil (stabilize disturbed soil throughout the construction site and stabilize disturbed soil between structures).
- Staging Areas (stabilize staging areas during use, and stabilize staging area soils at project completion).
- Traffic Areas for Construction Activities (stabilize all off-road traffic and parking areas, and stabilize all haul routes, and direct construction traffic over established haul routes).
- Vacant Lands (where vacant lots > 0.1 acre and have a cumulative area > 500 sq. ft. that are driven over, prevent vehicle trespassing, parking or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or equivalent).

For large operations (active operations > 10 acres as set forth in the Rule 403.1 Handbook), the following additional requirements apply:

- Disturbed surface areas (except completed grading areas) (apply dust suppression in sufficient quantify and frequency to maintain a stabilized surface, and, if fugitive dust still visible due to wind, then water at least twice per day > 80% of unstabilized area).
- Disturbed surface areas (completed grading areas) (apply chemical stabilizers within 5 working days of grading completion or apply water to > 80% on a daily basis or apply dust suppressants sufficient to maintain a stabilized surface).
- Inactive disturbed surface areas (apply water to > 80% on a daily basis or apply dust suppressants sufficient to maintain a stabilized surface, or establish a vegetative ground cover within 21 days after active operations have ceased – sufficient density to expose < 30% within 90 days of planting, or some combination of above).

The following additional control measure apply to large operations when the applicable performance standards cannot be met through implementation of the measures listed above.

- Disturbed surface areas (apply chemical stabilizers, increase watering).

In Coachella Valley, under SCAQMD Rule 403.1, in addition to the requirements in SCAQMD Rule 403, one of the following measures is required for inactive disturbed surface areas if active operations cease for more than 20 days:

- Inactive disturbed surface areas (apply water to > 80% on a daily basis or apply dust suppressants sufficient to maintain a stabilized surface, or establish a vegetative ground cover within 21 days after active operations have ceased – sufficient density to expose < 30% within 90 days of planting, or some combination of above).

Under the local ordinances adopted by local jurisdictions in Coachella Valley, the following requirements apply to disturbed vacant lands, weed abatement and unpaved parking lots:

- *Disturbed Vacant Lands*: Owners of property with a disturbed surface area > 5,000 sq. ft. must prevent trespassing with physical access restrictions within 30 days, or if that is not effective in establishing a stabilized surface within 45 days, must also implement one of the following measures: surface gravel or chemical dust suppressants, restoring surfaces to native condition.
- *Weed Abatement*: Any operator conducting weed abatement activities on a site that results in a disturbed surface area of > 5,000 sq. ft. must apply sufficient water before and during weed abatement and ensure the affected area is stabilized once weed abatement activities have ceased.
- *Unpaved Parking Lots*: Unpaved parking lots must be paved within 6 months of ordinance adoption, or apply and maintain dust suppressants, or apply and maintain washed gravel. In addition, owners of public or private temporary unpaved parking lots (those used < 24 days per year) must apply and maintain chemical dust suppressants prior to any 24-hour period when > 40 vehicles are expected to enter and park. The owner of such lots > 5,000 sq. ft. must implement the disturbed vacant land requirements during non-parking periods.

Table 1 provides the basis to compare the fugitive dust rules applicable in Coachella Valley with the corresponding rules in five other areas that are either Serious PM_{10} nonattainment area or that were Serious PM_{10} nonattainment areas but that have been redesignated to attainment. Based on a review of the information in Table 1, the EPA finds that the requirements that apply to the open area source category in Coachella Valley are generally as stringent as they are in the other areas. The specific control techniques that are required in Coachella Valley are generally similar to those required in other areas. Specific techniques vary among disturbed vacant areas, weed abatement, unpaved parking lots and include measures such as prevention of trespassing through physical barriers or other means, watering or chemical stabilization, or long-term stabilization through vegetation ground cover or paving. As such, the EPA concludes that the requirements that apply to the open areas source category in Coachella Valley represent reasonable controls for the purposes of the EER.

5. Paved and Unpaved Roads

SCAQMD Rules 403 and 403.1 establish performance standards that prohibit visible dust emissions from crossing any property line or exceeding 20% opacity and that prohibit increases in PM_{10} levels > 50 $\mu g/m^3$ relative to upwind concentrations.

The performance standards do not apply when wind gusts are > 25 mph provided that certain control measures are implemented:

- Earthmoving (cease active operations or pre-water > 15 minutes);
- Disturbed surface areas (apply chemical stabilizers, increase watering);
- Unpaved roads (apply chemical stabilizers, apply water or stop all vehicular traffic);
- Open storage piles (apply water, install temporary coverings);
- Paved road track-out (cover all haul trucks or maintain appropriate freeboard.

In Coachella Valley, exemptions from the performance standards require documentation of wind speeds greater than 25 mph.

Under Rules 403 and 403.1, the control measures apply to active operations, which include heavy- or light-duty vehicular movement, but the property line plume and 20% opacity standards, and the PM_{10} concentration impact standard do not apply to unpaved roads that are:

- Used solely for maintenance of wind-generating equipment,
- Are unpaved public alleys, or
- Are service roads that are < 50 feet wide, within 25 feet of the property line, and have < 20 average daily traffic (ADT).

Under SCAQMD Rule 1186, the requirements for paved roads apply throughout the SCAQMD, including Coachella Valley. In addition, local ordinances adopted by local jurisdictions within Coachella Valley include requirements for paved and unpaved roads but exempt unpaved roads used solely for agricultural operations.

Under Rule 403, control measure requirements include:

- Road Shoulder Maintenance (apply water to unpaved shoulders prior to clearing and apply chemical suppressants or washed gravel to maintain a stabilized surface after maintenance).
- Traffic Areas for Construction Activities (stabilize all off-road traffic and parking areas, and stabilize all haul routes, and direct construction traffic over established haul routes).
- Unpaved Roads/Parking Lots (stabilize soils to meet the applicable performance standards and limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots).

For large operations (active operations > 10 acres as set forth in the Rule 403.1 Handbook):

- Water all roads used for any vehicular traffic at least once per every 2 hours of active operation;
- Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 mph; or
- Apply a chemical stabilizer to all unpaved road surfaces in sufficient amount and frequency to maintain a stabilized surface.

The following additional control measures apply to large operations when the applicable performance standards cannot be met through implementation of the measures listed above.

- Unpaved roads (apply chemical stabilizers, apply water or stop all vehicular traffic);
- Paved road track-out (cover all haul trucks or maintain appropriate freeboard).

Under Rule 1186, with respect to paved roads:

- Any owner or operator of a paved public road with ADT > 500 on which there is visible roadway accumulations (deposits > 200 sq. ft., but excluding vehicular track-out) must begin removal through street cleaning within 72 hours of notification with completion as soon as feasible.
- Agencies that contract to acquire street sweeping equipment or street sweeping services for routine purposes must acquire or use only certified street sweeping equipment.
- Any owner or operator of a public or private paved road with projected ADT > 500 must construct all new or widened roads with curbs or 4-foot (500 - 3,000 ADT) or 8-foot (> 3,000 ADT) paved outside shoulders, and paved (or equivalent) medians (unless < 45 mph speed limits).

Under the local ordinances adopted by local jurisdictions in Coachella Valley, with respect to unpaved roads:

- Owners of public or private unpaved roads with ADT between 20 and 150 must take measures (signage or speed control devices) to reduce vehicular speeds to < 15 mph.
- Owners of < 6 miles of public or private unpaved roads must pave each segment having ADT > 150, or alternatively apply and maintain chemical dust suppressants under a certain specific schedule.
- Owners of > 6 miles of public or private unpaved roads must stabilize each segment > 150 ADT with pavement or chemical dust suppressants under a certain specified schedule.
- Owners of any public or private road must not allow visible dust emissions > 20%, or extend more than 100 feet in any direction, and must either not allow silt loading > 0.33 ounces per sq. ft. or not allow the silt content > 6%.

Under the local ordinances, with respect to paved roads:

- Any owner of paved roads must construct all new or widened paved roads in accordance with curbing, paved or treated road shoulders with minimum widths (4 feet for 500 to 3,000 ADT and 8 feet for > 3,000 ADT) and paved or treated medians.
- Any owner of public or private paved roads must remove or cause to be removed any erosion-caused deposits > 2,500 sq. ft. within 24 hours after receiving notice or prior to resumption of traffic where the paved area has been closed to vehicular traffic.

Table 1 provides the basis to compare the fugitive dust rules applicable in Coachella Valley with the corresponding rules in five other areas that are either Serious PM_{10} nonattainment area or that were Serious PM_{10} nonattainment areas but that have been redesignated to attainment. Based on a review of the information in Table 1, the EPA finds that the requirements that apply to the paved and unpaved roads source category in Coachella Valley are generally as stringent as they are in the other areas. The specific control techniques that are required in Coachella Valley are generally similar to those required in other areas. Specific techniques vary between paved and unpaved roads, but include measures such as road shoulder maintenance, and specifications for shoulders (or curbs) and medians of new or widened paved roads, and speed restrictions, watering, chemical stabilization or paving of unpaved roads, and use of certified street-sweeping equipment. As such, the EPA concludes that the requirements that apply to the paved and

unpaved roads source category in Coachella Valley represent reasonable controls for the purposes of the EER.

6. Agricultural Sources

SCAQMD Rules 403 and 403.1 establish performance standards that prohibit visible dust emissions from crossing any property line or exceeding 20% opacity and that prohibit increases in PM_{10} levels > 50 $\mu g/m^3$ relative to upwind concentrations.

The performance standards do not apply when wind gusts are > 25 mph provided that certain control measures are implemented:

- Earthmoving (cease active operations or pre-water > 15 minutes);
- Disturbed surface areas (apply chemical stabilizers, increase watering);
- Unpaved roads (apply chemical stabilizers, apply water or stop all vehicular traffic);
- Open storage piles (apply water, install temporary coverings);
- Paved road track-out (cover all haul trucks or maintain appropriate freeboard.

In Coachella Valley, exemptions from the performance standards require documentation of wind speeds greater than 25 mph.

SCAQMD Rule 403 applies to any activity or man-made condition capable of generating fugitive dust with the exception of, among others: dairy farms; confined animal facilities (raising of > 3,360 fowl or 50 animals where feeding is other than grazing) < 1 acre; agricultural vegetative crop operations < 10 acres; and agricultural vegetative crop operations > 10 acres provided that person responsible for operations voluntarily implements the conservation management practices in the Rule 403 Agricultural Handbook (Rule 403 Coachella Valley Agricultural Handbook applies outside the South Coast Air Basin) and completes and maintains the self-monitoring form.

Under Rule 403, any person who operates or authorizes the operation of a confined animal facility must implement the applicable conservation management practices:

- Manure Handling (cover manure prior to removing off-site, and spread the manure before 11:00 a.m. and when wind conditions are less than 25 mph, and (applicable to commercial poultry ranches) utilize coning and drying manure management by removing manure at laying hen houses at least twice per year and maintain a base of > 6 inches of dry manure after clean out, or utilize frequent manure removal by removing the manure from laying hen houses at least every several days and immediately thin bed dry the material.
- Feedstock Handling (utilize a sock or boot on the feed truck auger when filling feed storage bins).
- Disturbed Surfaces (maintain at least 70% vegetative cover on vacant portions of the facility, or utilize conservation tillage practices or manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, or apply dust suppressants in sufficient concentrations and frequencies to maintain a stabilized surface).

- Unpaved Roads (Restrict access to private unpaved roads either through signage or physical access restrictions and control vehicular speeds < 15 mph, or cover frequently traveled unpaved roads with low silt content materials, or treat unpaved roads with water, mulch, chemical dust suppressants or other cover to maintain a stabilized surface).
- Equipment Parking Areas (apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface, or apply material with low silt content).

Under Rule 403.1, any person involved in agricultural tilling or soil mulching activities must cease such activities when wind speeds > 25 mph.

SCAQMD Rule 1186 applies to livestock operations whose contiguous bounded areas > 10 acres. Livestock operations are defined as operations directly related to the raising of > 50 animals for the primary purpose of making a profit or for a livelihood.

Under Rule 1186, any owner or operator of livestock operations must:
- Cease all hay grinding activities between 2:00 and 5:00 p.m. each day, if visible emissions extend > 50 feet from a hay grinding source, and
- Treat all unpaved access connections and unpaved feed lane access areas with either pavement, gravel (maintained to a depth of 4 inches), or asphaltic roadbase.

Table 1 provides the basis to compare the fugitive dust rules applicable in Coachella Valley with the corresponding rules in five other areas that are either Serious PM_{10} nonattainment area or that were Serious PM_{10} nonattainment areas but that have been redesignated to attainment. Based on a review of the information in Table 1, the EPA finds that the requirements that apply to the agricultural source category in Coachella Valley are generally as stringent as they are in the other areas. The specific control techniques that are required in Coachella Valley are generally similar to those required in other areas. Specific techniques vary among various aspects of agriculture – confined animal facilities, cropland, and farm roads, for example. Generally, like other areas, agricultural sources in Coachella Valley must select among specific conservation management practices developed for specific activities, such as manure or feedstock handling, or for specific areas, such as disturbed surfaces, unpaved roads, or equipment parking areas. As such, the EPA concludes that the requirements that apply to the agricultural source category in Coachella Valley represent reasonable controls for the purposes of the EER.

C. Imperial Valley

1. Construction / Earth Movement

ICAPCD Rule 801 applies to any construction and other earthmoving activities, except for single-family residential dwellings. The rule establishes a 20% visible dust emissions opacity limit. The opacity limit does not apply when wind gusts exceed 25 mph if at least one of the listed control measures (cessation for one hour after wind event, hourly water or dust suppressant application, construct barrier in addition to one of the other measures) is implemented for each applicable fugitive dust source type.

Under Rule 801, all persons who own or operate a construction site must implement the following measures for each stage of construction:

- Pre-activity (pre-watering, phasing);
- Active operations (water or chemical stabilization, wind barriers);
- Periods of inactivity (restrict access, water or chemical stabilization);
- Other construction phases are covered by other ICAPCD 800 series rules (e.g., bulk material handling and track-out).

In addition, all persons who own or operate construction sites of > 10 acres for residential developments or > 5 acres for non-residential developments must develop a dust control plan.

Table 1 provides the basis to compare the fugitive dust rules applicable in Imperial Valley with the corresponding rules in five other areas that are either Serious PM_{10} nonattainment area or that were Serious PM_{10} nonattainment areas but that have been redesignated to attainment. Based on a review of the information in Table 1, the EPA finds that the requirements that apply to the construction/earth movement source category in Imperial Valley are generally as stringent as they are in the other areas. For instance, all the districts have established a 20% opacity limit as a performance standard for fugitive dust emissions from this source category. The specific control techniques that are required in Imperial Valley are generally similar to those required in other areas (watering, chemical stabilization, phasing, wind barriers, restriction of access, etc.). As such, the EPA concludes that the requirements that apply to the construction/earth movement source category in Imperial Valley represent reasonable controls for the purposes of the EER.

2. Bulk Materials

ICAPCD Rule 802 applies to bulk materials handling, storage and transport, except for materials subject to damage from water or chemical stabilization, low volume storage or handling or short distance transport with use of a chute or conveyor. The rule establishes a 20% opacity visible dust emissions limit.

Under Rule 802, persons engaged in bulk materials handling, transfer, storage and hauling must implement the following measures for each activity:

- Bulk Material Handling/Transfer (spray water prior to handling, apply chemical stabilization, or shelter or enclose);
- Bulk Material Storage (stabilize, cover, construct barriers plus water or chemical stabilization, use three-sided structure as high as storage pile);
- Material transport/ hauling (completely cover or enclose all haul truck loads of bulk materials; with aggregate materials, maintain six inches or more of freeboard; no spillage from cargo compartments, cleaning of cargo compartment after removal).

Table 1 provides the basis to compare the fugitive dust rules applicable in Imperial Valley with the corresponding rules in five other areas that are either Serious PM_{10} nonattainment area or that were Serious PM_{10} nonattainment areas but that have been redesignated to attainment. Based on a review of the information in Table 1, the EPA finds that the requirements that apply to the bulk materials source category in Imperial Valley are generally as stringent as they are in the other areas. Like Imperial Valley, most of the other areas are subject to a 20% opacity limit as a

performance standard for fugitive dust emissions from this source category. The specific control techniques that are required in Imperial Valley are generally similar to those required in other areas. Different techniques apply to different aspects of bulk material storage loading/unloading, hauling and storage and include watering, chemical stabilization, maintaining space (freeboard) between the side of the haul truck and the height of the material, use of three-sided structure at least as high as storage pile, cleaning of cargo compartment after removal. As such, the EPA concludes that the requirements that apply to the bulk materials source category in Imperial Valley represent reasonable controls for the purposes of the EER.

3. Carry-Out and Track-Out

ICAPCD Rule 803 applies to all sites where track-out and carry-out may occur on paved public roads or paved shoulders of paved public roads, except for agricultural operations subject to Rule 806 and low use (10 days out of 90) sites. Under ICAPCD Rule 803, the following measures are required to limit fugitive dust from carry-out and track-out through implementation of the following: clean up immediately within urban areas when track-out or carry-out extends 50 feet or more and clean up at the end of the day within rural areas. In addition, install track-out prevention devices or wash down systems, or pave, gravel or stabilize (50 feet or more) unpaved access roads adjoining paved roads at all sites with access to a paved road and with $\geq$ 150 average vehicle trips per day by vehicles with three or more axles.

Table 1 provides the basis to compare the fugitive dust rules applicable in Imperial Valley with the corresponding rules in five other areas that are either Serious PM_{10} nonattainment area or that were Serious PM_{10} nonattainment areas but that have been redesignated to attainment. Based on a review of the information in Table 1, the EPA finds that the requirements that apply to the carry-out and track-out source category in Imperial Valley are generally as stringent as they are in the other areas. The specific control techniques that are required in Imperial Valley are generally similar to those required in other areas. Different techniques apply to different aspects of carry-out and track-out and include installation of track-out prevention systems or wash-down systems, stabilization of adjoining unpaved access roads, immediate clean-up of track-out within urban areas when track-out extends 50 feet or more or clean up at the end of the day within rural areas. As such, the EPA concludes that the requirements that apply to the carry-out and track-out source category in Imperial Valley represent reasonable controls for the purposes of the EER.

4. Open Areas

ICAPCD Rule 804 applies to open areas of 0.5 acres or more within urban areas, or 3.0 acres or more within rural areas, and containing at least 1,000 sq. ft. of disturbed surface area, with exemptions for agricultural operations subject to Rule 806, and recreational Off-Highway Vehicle (OHV) Use Areas on public lands subject to Rule 800.

Under Rule 804, all persons who own or otherwise have jurisdiction over an open area must implement one or more of the following measures and limit visible dust emissions to 20% opacity: apply water or chemical suppressant to all unvegetated areas; establish vegetation on previously disturbed areas; pave or apply gravel or chemical stabilizers. With respect to vehicle use in open areas, Rule 804 requires that, within 30 days of discovery, a person who owns or

otherwise has jurisdiction over such an area must prevent unauthorized vehicle access by posting "No Trespassing" signs or installing physical barriers.

Table 1 provides the basis to compare the fugitive dust rules applicable in Imperial Valley with the corresponding rules in five other areas that are either Serious PM_{10} nonattainment area or that were Serious PM_{10} nonattainment areas but that have been redesignated to attainment. Based on a review of the information in Table 1, the EPA finds that the requirements that apply to the open area source category in Imperial Valley are generally as stringent as they are in the other areas. The specific control techniques that are required in Imperial Valley are generally similar to those required in other areas. Specific techniques include prevention of trespassing through physical barriers or other means, watering or chemical stabilization, or long-term stabilization through vegetation ground cover or paving. As such, the EPA concludes that the requirements that apply to the open areas source category in Imperial Valley represent reasonable controls for the purposes of the EER.

5. Paved and Unpaved Roads

Under ICAPCD Rule 800, off-road events or competitions with > 50 average vehicle daily trips on any unpaved road segment or unpaved surface area dedicated to vehicle parking and unpaved traffic area must limit visible dust emission opacity to < 20% and must apply and maintain one or more of the following measures: watering, washed gravel, paving, restrict access, restrict speed limit at 15 mph, chemical suppressants, roadmix.

ICAPCD Rule 805 applies to any new or existing public or private paved or unpaved road, road construction project or road modification project other than driveways serving single-family residential dwellings, agricultural operation sites subject to ICAPCD Rule 806 and recreational OHV use areas on public land subject to ICAPCD Rule 800. Under Rule 805, the following requirements apply:

- For unpaved roads with ADT of 50 or more and unpaved haul and access roads, limit visible dust emissions to 20% opacity and apply one or more of the following measures (pave, apply chemical stabilizers, apply gravel, wetting, permanent road closure, restrict unauthorized vehicle access).
- No new unpaved roads within any area with a population of 500 or more unless the road meets the definition of a temporary unpaved stabilized road.
- 10-year compliance period to convert all unpaved roads to stabilized unpaved roads (i.e., meets the requirements for a "stabilized surface" as determined by a specific test method).
- Canal roads with ADT of 20 or more, limit visible dust emissions to 20% opacity and apply one or more of the following measures (stocking of triploid grass carp in canals to reduce maintenance vehicle trips to remove aquatic weeds, install remote control delivery gates, implement silt removal program, permanent road closure, conversion of canal to pipeline, lining canals to eliminate maintenance needs, canal bank surface maintenance).
- For unpaved traffic areas larger than one acre and with ADT of 75 or more, limit visible dust emissions to 20% and apply one or more of the following measures (pave, apply chemical stabilizers, apply and maintain gravel, wetting).

- New or modified paved roads must include curbs or include paved shoulders and medians (2 to 6 feet depending on ADT) or landscape and maintain with grass or other vegetative ground cover.

Table 1 provides the basis to compare the fugitive dust rules applicable in Imperial Valley with the corresponding rules in five other areas that are either Serious PM_{10} nonattainment area or that were Serious PM_{10} nonattainment areas but that have been redesignated to attainment. Based on a review of the information in Table 1, the EPA finds that the requirements that apply to the paved and unpaved roads source category in Imperial Valley are generally as stringent as they are in the other areas. The specific control techniques that are required in Imperial Valley are generally similar to those required in other areas. Specific techniques vary among off-road event or competitions, unpaved roads, canal roads and paved roads, but include measures such as prohibition of new unpaved roads in towns of 500 persons or more, stabilization of all unpaved roads, stabilization of unpaved traffic areas, and specifications for shoulders (or curbs) and medians of new or widened paved roads. As such, the EPA concludes that the requirements that apply to the paved and unpaved roads source category in Imperial Valley represent reasonable controls for the purposes of the EER.

6. Agricultural Sources

Under ICAPCD Rule 806, persons owning or operating an agricultural operation site > 40 acres must implement at least one of the conservation management practices (CMPs) from each of the specific activity CMP groups unless they implement the Conservation Tillage CMP:

- Land preparation and cultivation (alternative tilling, bed/row size spacing, chemigation, combined operations, conservation irrigation, cover crops, equipment changes, fallow land, integrated pest control, mulching, night farming, non tillage, organic pesticides, precision farming or transgenic crops);
- Harvest activities (baling/large bales, combined operations, equipment changes, green chop, hand harvesting, fallow land, night harvesting, no burning, pre-harvesting soil preparation, shed packing, shuttle system);
- Unpaved roads and unpaved traffic areas (chips/mulches, gravel, paving, restricted access, speed limit, track-out control, water application, field windbreak, and more stringent measures where ADT > 20 trucks or 50 total vehicles);
- Cropland/Other (alternate tilling, application efficiencies, baling/large bales, bulk materials control, chemigation, fallow land, grinding/chipping, integrated pest management, irrigation power units, mulching, night farming, no burning, non tillage, organic practices, permanent crops, reduced pruning, soil amendments, soil incorporation, sulfur - reduction of dusting, surface roughening, transgenic crops, wind barrier);
- Windblown dust control (when preparing a field for planting, minimize the time that newly tilled soil is smooth and dry by leaving the field surface with large clods for as long as possible and bedding and planting the field as soon as possible once it no longer has large clods; for fields that are in between crops or permanently fallow – cover crop, conservation tillage, crop residence management, cross wind stripcropping, field windbreaks, ridge roughness, surface roughening, wind barrier).

Table 1 provides the basis to compare the fugitive dust rules applicable in Imperial Valley with the corresponding rules in five other areas that are either Serious PM_{10} nonattainment area or that were Serious PM_{10} nonattainment areas but that have been redesignated to attainment. Based on a review of the information in Table 1, the EPA finds that the requirements that apply to the agricultural source category in Imperial Valley are generally as stringent as they are in the other areas. The specific control techniques that are required in Imperial Valley are generally similar to those required in other areas. Specific techniques vary among various aspects of agriculture – land preparation and cultivation, harvest activities, unpaved roads and unpaved traffic areas, cropland, and windblown dust control. As such, the EPA concludes that the requirements that apply to the agricultural source category in Imperial Valley represent reasonable controls for the purposes of the EER.

TABLE 1: COMPARISON OF FUGITIVE DUST CONTROLS IN SELECTED PM_{10} NONATTAINMENT AND MAINTENANCE AREAS					
Imperial Valley Planning Area	***South Coast Air Basin***	***Coachella Valley***	***San Joaquin Valley***	***Las Vegas Valley***	***Phoenix Planning Area***
Imperial County Air Pollution Control District (ICAPCD)	***South Coast Air Quality Management District (SCAQMD)***	***South Coast Air Quality Management District and Local Jurisdictions***	***San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD)***	***Clark County Department of Air Quality (CCDAQ)***	***Maricopa County Air Quality Department (MCAQD)***
Construction/Earth Movement Activities					
ICAPCD Rule 801 (Construction and Earthmoving Activities), amended November 8, 2005	**SCAQMD Rule 403 (Fugitive Dust), amended June 3, 2005**	**SCAQMD Rules 403 (Fugitive Dust), amended June 3, 2005; and 403.1 (Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources), amended April 2, 2004; Local Ordinances**	**SJVUAPCD Rule 8021 (Construction, Demolition, Excavation, Extraction, and Other Earthmoving Activities), amended August 19, 2004**	**CCDAQ Section 94 (Permitting and Dust Control for Construction Activities), amended July 1, 2004**	**MCAQD Rule 310 (Fugitive Dust from Dust-Generating Operations), amended January 27, 2010**
Applicability					
Applies to any construction and other earthmoving activities, except for single-family residential dwellings. • 20% visible dust emissions opacity limit does not apply when wind gusts exceed 25 mph if at least one of the four listed control measures (cessation for one hour after wind event, hourly water or dust suppressant application, construct barrier in addition to one of the other measures) is implemented for each applicable fugitive dust source type.	Any activity or man-made condition capable of generating fugitive dust with the exception of: • Dairy farms; • Confined animal facilities < 1 acre; • Agricultural vegetative crop operations < 10 acres; • Agricultural vegetative crop operations > 10 acres provided that person responsible for operations voluntarily implements the conservation management practices in the Rule 403 Agricultural Handbook (Rule 403 Coachella Valley Agricultural Handbook applies outside the South Coast Air Basin) and completes and maintains the self-monitoring form; • Emergency operations;	See SCAQMD Rule 403. *Rule 403.1* Rule 403.1 requirements are supplemental to those in Rule 403 and apply to fugitive dust sources in the Coachella Valley. Rule 403.1 requires any person seeking an exemption from the Rule 403 provision prohibiting > 20% opacity or visible emissions from crossing any property line or 50 μ/m^3 impact during wind conditions in excess of 25 mph to determine when wind conditions exceed 25 mph. The determination of wind speed conditions in excess of 25 mph shall be based on criteria for facilities with and without an on-site anemometer.	Applies to any construction, demolition, excavation, extraction, and other earthmoving activities (including travel on access roads to and from the site) other than: • Emergency activities, utility activities, activities > 3,000 feet elevation above sea level, on-field agricultural source; • Blasting activities, maintenance or remodeling of existing building and small-scale additions, additions to single-family residences, disking of weeds related to fire prevention, daily landfill cover.	Applies to all construction activities (including but not limited to land clearing, soil and rock excavation or removal, soil or rock hauling, soil or rock crushing or screening, filling, compacting, stockpiling and grading, blasting, demolition, implosion, driving vehicles on a construction site, establishing or using staging areas, parking areas, material storage areas or access routes to or from a construction site) that disturb the soils or have the potential to disturb soils or emit or have the potential to emit particulate matter, excluding: • Operation of emission units or activities permitted under any other section of the CCDAQ regulations; • Normal farm cultural practices and existing equestrian facilities; and	Applies to all dust-generating operations (land clearing, maintenance and land clean-up using mechanized equipment, earthmoving, weed abatement by disking or blading, excavating, construction, demolition, bulk materials handling, storage or transportation operations (e.g., open storage piles), operation of any outdoor equipment, operation of motorized machinery, establishing or using staging areas, parking areas, material storage areas or access routes to and from a site, establishing or using unpaved haul/access roads to, from and within a site, disturbed surface areas associated with a site, installing initial landscapes using mechanized equipment) except for: • Normal farm cultural practices;

	• Essential service utilities during outages; • Contractors after their contract ends so long as the required control measures were implemented during the contractual period; • Weed abatement operations ordered by agricultural commissioner or fire department provided certain measures are implemented; • Sandblasting operations.	*Local Ordinances* Local ordinances apply to any potential dust-generating activity on a site with certain exemptions, including activities that do not require issuance of a grading permit or those that require a building permit provided that the project results in < 5,000 sq. ft. of soil disturbance; line projects (i.e., pipelines, cable access lines, etc.).		• Emergency activities.	• Non-traditional sources of fugitive dust that area subject to Rule 310.01, including open areas and vacant lots (including vehicle use in same), unpaved parking lots and roadways (including alleys), livestock activities, erosion-caused deposition of bulk materials onto paved surfaces, easements for utilities; • Emergency activities; • Establishment or maintenance of landscapes without the use of mechanized equipment; • Rooftop operations for cutting, drilling, grinding, or coring roofing tile on a pitched roof. In addition: • Dust Control Coordinator required for projects 5 acres or greater of disturbed soil; • Permits and Dust Control Plan required for projects 0.10 acres or greater of disturbed soil.
Control Requirements					
• Establishes a 20% visible dust emissions opacity limit. • Construction sites of > 10 acres for residential developments or > 5 acres for non-residential developments must develop a dust control plan. • Must comply with BACM to limit fugitive dust during: - Pre-activity (pre-watering, phasing); - Active operations (water or chemical stabilization, wind barriers);	Performance standards include: • No person shall cause or allow the emissions of fugitive dust from any activity operation, open storage pile, or disturbed surface area such that: - Dust remains visible beyond the property line. - Dust emissions exceed 20% opacity. • No person shall cause or allow PM_{10} levels to increase relative to upwind concentrations by > 50 µg/m^3 when determined by sampling.	See SCAQMD Rule 403. *Rule 403.1* Any active operation with a disturbed surface area of more than 5,000 sq ft. shall not initiate any earth-moving activities unless a fugitive dust control plan is prepared and approved in accordance with subdivision (f) and the Rule 403.1 Implementation Handbook. The requirement for a SCAQMD-approved fugitive dust control plan does not apply to any active	Establishes a 20% visible dust emissions (VDE) limit and requires implementation of (per activity or phase): • Wrecking ball or equivalent to demolish buildings (watering, dust suppressants to unpaved surface areas in vicinity, compliance with Rules 8031 and 8041); • Construction and Excavation (pre-water, phasing; apply water or stabilizers, barriers plus water or treatment, water or treat unpaved haul access roads and traffic areas);	Construction activities must implement measures to prevent visible emissions > 20% opacity or prevent any dust plume from extending > 100 yards from the point of origin. • One or more methods must be used to maintain dust control on all disturbed soils on construction sites: sufficiently damp to prevent loose grains of soil from becoming dislodged when using the Drop Ball Test, soil crusted over by application of water, or graveled or treated with dust suppressant.	Owners or operators must not allow visible fugitive dust emissions to exceed 20% opacity limit and must not allow visible emissions beyond the property line within which the emissions are generated, except where: • Wind conditions are overwhelming (but must cease dust-generating operations and stabilize surface except at landfills if violative of state law); • Emergency maintenance of flood control channels and water retention;

- Periods of inactivity (restrict access, water or chemical stabilization); - Other construction phases covered by other ICAPCD 800 series rules (e.g., bulk material handling and track-out).	Performance standards do not apply when wind gusts > 25 mph, provided that certain control measures are implemented: • Earthmoving (cease active operations or pre-water > 15 minutes); • Disturbed surface areas (apply chemical stabilizers, increase watering); • Unpaved roads (apply chemical stabilizers, apply water or stop all vehicular traffic); • Open storage piles (apply water, install temporary coverings); • Paved road track-out (cover all haul trucks or maintain appropriate freeboard). Control measure requirements include: • No person shall conduct active operations without utilizing Best Available Control Measures applicable to all Construction Activity Sources to minimize fugitive dust emissions: - Backfilling (stabilize backfill materials when not actively handling, stabilize backfill materials during handling, and stabilize soil at completion of activity) - Clearing and Grubbing (maintain stability of soil through pre-watering of site prior to clearing and grubbing, stabilize soil during clearing and grubbing activities, stabilize soils immediately after clearing and grubbing activities)	operation which is required to submit a dust control plan to any city or county government that has adopted a District-approved dust control ordinance. Projects with disturbed surface area > 50 acres shall have a Dust Control Supervisor that, among other requirements, has completed the SCAQMD dust control class and has been issued a Certification of Compliance. Requirements are similar to those under Rule 403 for large operations, but the threshold for large operations is 10 acres, rather than 50 acres. For large operations (> 10 acres), control measures include: • Earth-movement (project phasing to reduce extent of disturbed surface at any given time), pre-watering (72 hours), watering during earth-movement activities, perimeter controls, site stabilization. <u>*Local Ordinances*</u> Any operator on a site with a disturbed surface area > 1 acre shall operate a water application system, if watering is the selected control measure. An operator applying for a grading permit, or a building permit for an activity with a disturbed area > 5,000 sq. ft., must have an approved Fugitive Dust Control Plan for initiating any earth-moving operations.	• Speed limitations (< 15 mph) and posting of speed limit signs (at least every 500 feet) on uncontrolled unpaved access/haul roads on construction sites; • Wind generated fugitive dust requirements (cessation of activity other than continued watering or other dust control treatment when high winds cause visible plumes $\geq$ 20% opacity). • Approved Dust Control Plan required for sites with > 10 acres of disturbed surface area for residential development, or $\geq$ 5 acres active disturbance; or 2,500 cubic yards of bulk material on at least 3 days.	• Implement any item listed as a "requirement" in the Best Management Practices section of the Construction Activities Dust Control Handbook for each applicable construction activity (Backfilling; Blasting; Clearing and Grubbing; Crushing; Cut and Fill; Demolition; Disturbed Soil; Disturbed Land; Dust Suppressant, Dust Palliative, and Surfactant Selection and Use; Bulk Materials; Landscaping; Paving; Sawing; Screening; Staging Areas; Stockpiling; Trackout; Traffic; Trenching; Truck Loading). • Construction sites must implement long-term stabilization techniques within 10 days when construction activities have ceased for 30 days. • In the event there are wind conditions that cause fugitive dust emissions in excess of the 20% opacity limit or the 100 foot from origin limit in spite of implementation of control measures, all construction activities that cause fugitive emissions must cease except for watering. • Dust control permits are required except for construction sites < 0.25 acres, mechanized trenching < 100 feet or mechanical demolition of any structure < 1,000 sq. ft., landscaping by an individual at own residence, emergency maintenance activities, and	• Vehicle test and development facilities and operations; and • Activities near the property line. For disturbed areas, owners/operators must implement the following control measures: • Before disturbed areas are created, either pre-water to depth of cuts or phase work to reduce the amount of disturbed surface areas at any one time; • While disturbed areas are being created, either apply water or other dust suppressant to keep the soil visibly moist through the process, or apply water to maintain a soil moisture content > 12% and construct fences or wind barriers; • When the dust-generating operation is finished for > 30 days, pave, apply gravel or other dust suppressant, establish vegetative cover and restrict vehicle access to the area, apply water and prevent access by fences or equivalent, restore area such that the vegetative ground cover and soil characteristics are similar to nearby undisturbed native conditions. With respect to demolition activities, owners/operators must apply water to demolition debris immediately following demolition activity and apply water to all disturbed soils surfaces to establish a visible crust and to prevent wind erosion.

	- Clearing Forms (use water spray to clear forms, or use sweeping and water spray to clear forms, or use vacuum systems to clear forms) - Crushing (stabilize surface soils prior to operation of support equipment, and stabilize material after crushing) - Cut and Fill (pre-water soils prior to cut and fill activities and stabilize soil during and after cut and fill activities) - Demolition – Mechanical/Manual (stabilize wind erodible surfaces, stabilize surface soils where support equipment and vehicles will operate, stabilize loose soils and demolition debris) - Earthmoving Activities (pre-apply water to depth of proposed cuts, re-apply water to maintain damp soils and to ensure that visible emissions < 100 feet in any direction, and stabilize soils once earthmoving activities are complete) - Landscaping (stabilize soils, materials, slopes) - Trenching (stabilize surface soils where trencher and support equipment will operate and stabilize soils at the completion of trenching activities)	Any operator involved in earth-moving operation shall implement at least one of the short-term stabilization methods during non-working hours: • Maintaining soils in a damp condition by sight or touch; or • Establishment of a stabilized surface through watering; or • Application of a chemical dust suppressant to maintain a stabilized surface. Within 10 days of ceasing activity implement one of the long-term stabilization techniques for any disturbed surface with no activity for at least 30 days: • Revegetation with 75% ground coverage with an active watering system; • Watering with physical access restriction surrounding the area; • Use of chemical stabilizers. Any operator of a project with a disturbed surface area > 50 acres shall have an Environmental Observer who meets certain qualifications and has certain responsibilities.		certain weed removal or dust palliative application projects. • Dust Control Monitors are required for any construction projects > 50 acres of actively disturbed soil.	

	- Turf Overseeding (apply sufficient water immediately prior to conducting turf vacuuming activities, and cover haul vehicles prior to exiting the site). Large Operations (active operations > 50 acres of disturbed surface area or daily earthmoving or throughput > 5,000 cu. yds.): Must implement the above measures and implement these additional measures: • Earthmoving (except construction cut and fill and mining) (maintain soil moisture > 12% or for any earthmoving > 100 feet from property line, conduct watering as necessary to prevent visible dust emissions > 100 feet in any direction) • Earthmoving (construction fill) (maintain soil moisture content > 12%, and for areas where optimum moisture content for compaction is < 12%, complete the compaction process as expeditiously as possible after achieving > 70% optimum soil moisture content and take certain other steps) • Earthmoving (construction cut and mining) (conduct watering as necessary to prevent visible emissions from extending > 100 feet unless the area is inaccessible to watering vehicles). The following additional control measure apply to large operations when the applicable performance				

	standards cannot be met through implementation of the measures listed above. • Earthmoving (cease active operations or pre-water < 15 minutes prior to moving). Large Operations must also notify the SCAQMD, maintain daily records to document the specific dust control action taken, install and maintain signage, identify a dust control supervisor, notify the SCAQMD after the site no longer qualifies as a large operation.				
Imperial County	***South Coast***	***Coachella Valley***	***San Joaquin Valley***	***Clark County***	***Maricopa County***
Bulk Materials					
ICAPCD Rule 802 (Bulk Materials), amended November 8, 2005	**SCAQMD Rule 403 (Fugitive Dust), amended June 3, 2005**	**SCAQMD Rules 403 (Fugitive Dust), amended June 3, 2005; and 403.1 (Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources), amended April 2, 2004; Local Ordinances**	**SJVUAPCD Rule 8031 (Bulk Materials), amended August 19, 2004**	**CCDAQ Section 94 (Permitting and Dust Control for Construction Activities), amended July 1, 2004**	**MCAQD Rule 310 (Fugitive Dust from Dust-Generating Operations), amended January 27, 2010**
Applicability					
Bulk material handling, storage and transport, except for: • Materials that would be damaged by water or chemical stabilization, • Low volume storage or handling (< 100 cubic yards), • Transport of bulk material only a short distance (< 12 feet) with use of a chute or conveyor.	Any activity or man-made condition capable of generating fugitive dust with certain exceptions. The requirements in the rule apply to "active operations," which refers to any source capable of generating fugitive dust, including earthmoving activities, which in turn means the use of equipment for any activity where soil is being moved or uncovered, including loading or unloading of dirt or bulk materials and adding to or	See SCAQMD Rule 403. <u>*Rule 403.1*</u> Rule 403.1 requirements are supplemental to those in Rule 403 and apply to fugitive dust sources in the Coachella Valley. Rule 403.1 requires any person seeking an exemption from the Rule 403 provision prohibiting > 20% opacity or visible emissions from crossing any property line or 50 μ/m^3 impact during wind conditions in excess of 25 mph to	Outdoor handling, storage, and transport of bulk material, other than: • Emergency activities, utility activities, activities > 3,000 feet elevation above sea level, on-field agricultural source; • Materials that would be damaged by water or chemical stabilization; • Spreading of landfill daily cover; • Low volume storage or handling (< 100 cubic yards);	Applies to all construction activities, including handling of building materials capable of entrainment in air (e.g., sand, cement powder).	Applies to all dust-generating operations, with certain exceptions, including bulk materials handing (e.g., bulk material hauling or transporting, bulk material stacking, loading, and unloading operations) and storage or transporting operations (e.g., open storage piles).

	removing from open storage piles of bulk materials.	determine when wind conditions exceed 25 mph. The determination of wind speed conditions in excess of 25 mph shall be based on criteria for facilities with and without an on-site anemometer. *Local Ordinances* Local ordinances apply to any potential dust-generating activity on a site with certain exemptions.	• Transport of bulk material only a short distance (< 12 feet) with use of a chute or conveyor; • Agricultural sources subject or exempt under Rule 8081.		
Control Requirements					
• Establishes a 20% opacity visible dust emissions limit. • Must comply with BACM to limit fugitive dust during: - Bulk Material Handling/Transfer (spray water prior to handling, apply chemical stabilization, or shelter or enclose); - Bulk Material Storage (stabilize, cover, construct barriers plus water or chemical stabilization, use 3-sided structure as high as storage pile); - Material transport/ hauling (completely cover or enclose all haul truck loads of bulk materials; with aggregate materials, maintain six inches or more of freeboard; no spillage from cargo compartments, cleaning of cargo compartment after removal).	Performance standards include: • No person shall cause or allow the emissions of fugitive dust from any activity operation, open storage pile, or disturbed surface area such that: - Dust remains visible beyond the property line. - Dust emissions exceed 20% opacity. • No person shall cause or allow PM_{10} levels to increase relative to upwind concentrations by > 50 µg/m^3 when determined by sampling. Performance standards do not apply when wind gusts > 25 mph, provided that certain control measures are implemented: • Earthmoving (cease active operations or pre-water > 15 minutes); • Disturbed surface areas (apply chemical stabilizers, increase watering); • Unpaved roads (apply chemical stabilizers, apply water or stop all vehicular traffic);	See SCAQMD Rule 403. *Rule 403.1* Requirements are similar to those under Rule 403 for large operations, but the threshold for large operations is 10 acres, rather than 50 acres. For large operations (> 10 acres), control measures include: • Storage piles/bulk material handling (wind sheltering, storage pile stabilization, material handling) In addition, new man-made bulk material deposits in the Coachella Valley Blowsand Zone must be stabilized with 24 hours through: • Application of water to at least 70% of the surface area of any bulk material deposits at least 3 times for each day there is evidence of wind driven fugitive dust; or • Application of chemical stabilizers in sufficient concentration to maintain a	Establishes a 20% VDE limit and requires implementation of (per activity or phase): • Handling of bulk materials (water or stabilizers or wind barriers plus water or stabilizers); • Storage of bulk materials (cover bulk materials with tarps or equivalent or construct and maintain wind barriers plus watering or stabilizers or use a 3-sided structure as high as height of pile); • On-site transport of bulk materials (speed limits, or maintain six inches of freeboard, or apply water, or cover with tarp); • Off-site transport of bulk materials (clean or cover before empty truck leaves site, and prevent spillage, and maintain six inches of freeboard and apply water to top of load, or cover with tarp); • Outdoor transport of bulk materials with a chute or conveyor (fully enclose, operate	Any person who engages in a construction activity must employ BACM for the purpose of dust control. With respect to bulk materials, BMP 13 (Importing/Exporting Soil, Rock, and other Bulk Materials) and BMP 23 (Truck Loading) from the CCDAQ Construction Activities Dust Control Handbook includes the following requirements: • Limit visible dust opacity from vehicular operations (by water application, limiting of vehicles speeds to < 15 mph, or apply and maintain dust suppressant on haul routes). • Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage. • Maintain 3-6 inches of freeboard to minimize spillings. • Stabilize material during transport on site (using tarps or equivalent on haul trucks or watering). • Clean wheels and undercarriage of haul trucks prior to leaving	Owner or operators must not allow visible fugitive dust emissions to exceed 20% opacity limit and must not allow visible emissions beyond the property line within which the emissions are generated, except where: • Wind conditions are overwhelming (but must cease dust-generating operations and stabilize surface except at landfills if violative of state law); • Emergency maintenance of flood control channels and water retention; • Vehicle test and development facilities and operations; and • Activities near the property line. In addition, owners or operators must: • With respect to off-site hauling onto areas accessible to the public, when cargo compartment is loaded, maintain > 3 inches of freeboard, load so that material is no higher than side of cargo compartment area, prevent

	• Open storage piles (apply water, install temporary coverings); • Paved road track-out (cover all haul trucks or maintain appropriate freeboard). Control measure requirements include: • No person shall conduct active operations without utilizing Best Available Control Measures applicable to all Construction Activity Sources to minimize fugitive dust emissions: - Importing/Exporting of Bulk Materials (stabilize material while loading to reduce fugitive dust emissions, maintain > 6 inches freeboard on haul vehicles, stabilize material while transporting, stabilize material while unloading) - Screening (pre-water prior to screening, limit fugitive dust emissions to opacity and plume length standards, and stabilize material immediately after screening) - Stockpiles/Bulk Material Handling (stabilize stockpiled materials, stockpiles < 100 yards of off-site occupied buildings must be < 8 feet in height, or must have a road bladed to top to allow water truck access or have water irrigation system) - Truck Loading (pre-water material prior to loading	stabilized surface for a period of at least 6 months; or • Installation of wind breaks of such design so as to reduce maximum wind gusts to less than 25 mph in the area of the bulk material deposits. New deposits of bulk material in the Coachella Valley Blowsand Zone originating from off-site undisturbed natural desert areas must be stabilized within 72 hours through: • Application of water to at least 70% of the surface area at least 3 times for each day there is evidence of wind driven fugitive dust; or • Application of chemical stabilizers in sufficient concentration to maintain a stabilized surface for a period of at least 6 months. <u>*Local Ordinances*</u> Any operator shall remove all bulk material track-out within one hour if material extends > 25 ft.; and at the conclusion of each workday. Any operator of a project with a disturbed surface area > 5 acres that involves import or export of > 100 cubic yards of bulk material per day shall install and maintain at least one of the following control measures: • Gravel pad • Paved surface extending at least 100 ft & 20 ft. long • Wheel shaker	water spray equipment or remove PM_{10} materials from conveyed materials).	construction site. • Ensure all loads are covered prior to leaving the construction site and traveling on public roadways. • Stabilize surface soils where loader, support equipment and vehicles will operate. • Stabilize material during loading (empty loader bucket slower and keep loader bucket close to the truck to minimize the drop height while dumping).	spillage, and cover with tarp or equivalent, and when cargo compartment is empty, clean the interior or cover with tarp or equivalent; • With respect to bulk material hauling not crossing a publicly-accessible area, limit vehicle speed to 15 mph, apply water to top of load, or cover haul trucks with tarp or equivalent; • With respect to bulk materials hauling at site crossing a publicly-accessible area, maintain > 3 inches of freeboard for haul trucks, ensure that material is no higher than sides of cargo container, prevent spillage from holes or other openings in cargo compartment, and install, maintain and use suitable trackout control device; • With respect to bulk materials stacking, loading, and unloading operations, prior to and during stacking, loading, and unloading, mix materials with water (or apply water) or mix material (or apply) a dust suppressant other than water; • With respect to open storage piles when not conducting stacking, loading, and unloading operations, cover all open storage piles with a tarp or equivalent, or apply water to maintain a soil moisture content > 12%, or maintain a visible crust and if non-tarp measure implemented, also construct and maintain wind barriers, storage silos or 3-sided enclosure with

	and ensure > 6 inches freeboard) Large Operations (active operations > 50 acres of disturbed surface area or daily earthmoving or throughput > 5,000 cu. yds.): Must implement the above measures and implement these additional measures: • Open storage piles (apply chemical stabilizer, or apply water to > 80% of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust, or install temporary coverings, or install a 3-sided enclosure meeting certain specifications). The following additional control measure apply to large operations when the applicable performance standards cannot be met through implementation of the measures listed above. • Open storage piles (apply water, install temporary coverings).	• Wheel washing system.			walls meeting certain specifications.
Imperial County	***South Coast***	***Coachella Valley***	***San Joaquin Valley***	***Clark County***	***Maricopa County***
Carry-Out and Track-Out					
ICAPCD Rule 803 (Carry-Out and Track Out), amended November 8, 2005	**SCAQMD Rule 403 (Fugitive Dust), amended June 3, 2005**	**SCAQMD Rules 403 (Fugitive Dust), amended June 3, 2005; and 403.1 (Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources), amended April 2, 2004; Local Ordinances**	**SJVUAPCD Rule 8041 (Carryout and Trackout), amended August 19, 2004**	**CCDAQ Section 94 (Permitting and Dust Control for Construction Activities), amended July 1, 2004**	**MCAQD Rule 310 (Fugitive Dust from Dust-Generating Operations), amended January 27, 2010**
Applicability					

All sites that are subject to Regulation VIII where track-out and carry-out may occur on paved public roads or paved shoulders of paved public roads. • Certain exemptions apply to agricultural operations subject to Rule 806 and low use (10 days out of 90) sites.	Any activity or man-made condition capable of generating fugitive dust. The control measures apply to active operations, which include heavy- or light-duty vehicular movement.	See SCAQMD Rule 403. *Rule 403.1* Rule 403.1 requirements are supplemental to those in Rule 403 and apply to fugitive dust sources in the Coachella Valley. Rule 403.1 requires any person seeking an exemption from the Rule 403 provision prohibiting > 20% opacity or visible emissions from crossing any property line or 50 µ/m^3 impact during wind conditions in excess of 25 mph to determine when wind conditions exceed 25 mph. The determination of wind speed conditions in excess of 25 mph shall be based on criteria for facilities with and without an on-site anemometer. *Local Ordinances* Local ordinances apply to any potential dust-generating activity on a site with certain exemptions.	All sites that are subject to Rule 8021, 8031, 8061 and 8071 where carryout or trackout has occurred or may occur on paved public roads or the paved shoulders of a paved public road, other than for: • Emergency activities, utility activities, activities > 3,000 feet elevation above sea level, on-field agricultural source; • Carryout and trackout caused by an agricultural source.	Applies to all construction activities that disturb or have the potential to disturb soils and that emit or have the potential to emit PM. Construction activities include, among others, soil and rock excavation or removal, soil or rock hauling.	Applies to all dust-generating operations, with certain exceptions, including bulk materials handing (e.g., bulk material hauling or transporting, bulk material stacking, loading, and unloading operations) and storage or transporting operations (e.g., open storage piles). Trackout/carryout is defined as any and all bulk materials that adhere to and agglomerate on the surfaces of motor vehicles, haul trucks, or equipment (including tires) and that have fallen or been deposited onto an area accessible to the public.
Control Requirements					
Must comply with BACM to limit fugitive dust during: • Track-out/carry-out (clean up immediately within urban areas when track-out or carry-out extends 50 feet or more or at the end of the day for rural areas). • In addition, install track-out prevention devices or wash down systems, or pave, gravel or stabilize (50 feet or more) unpaved access roads adjoining paved roads at all sites with access to a paved road and with	Performance standards include: • No person shall cause or allow the emissions of fugitive dust from any activity operation, open storage pile, or disturbed surface area such that: - Dust remains visible beyond the property line. - Dust emissions exceed 20% opacity. • No person shall cause or allow PM_{10} levels to increase relative to upwind concentrations by >	See SCAQMD Rule 403. *Rule 403.1* Requirements are similar to those under Rule 403 for large operations, but the threshold for large operations is 10 acres, rather than 50 acres. For large operations (> 10 acres), control measures include: • Vehicular Track-Out, Hauling and Cleanup (Track-out prevention, track-out mitigation).	• Blower devices or dry rotary brushes or brooms for removal of carryout or trackout on public roads expressly prohibited. • Visible carryout and trackout must be removed at the end of each workday. • For sites with > 150 average daily traffic (ADT) or > 20 truck ADT, install and maintain a trackout control device (grizzlies – 25 feet, gravel pads – 50 feet, paving – 100 feet) at all access points to paved public roads.	Any person who engages in a construction activity must employ BACM for the purpose of dust control. With respect to Trackout Prevention and Cleanup, BMP 20 from the CCDAQ Construction Activities Dust Control Handbook includes the following requirements: • In certain areas with soils with a Particulate Emission Potential (PEP) rated "High," construction activities roadways must be paved as early as possible.	Owners or operators must not allow visible fugitive dust emissions to exceed 20% opacity limit and must not allow visible emissions beyond the property line within which the emissions are generated, except where: • Wind conditions are overwhelming (but must cease dust-generating operations and stabilize surface except at landfills if violative of state law); • Emergency maintenance of flood control channels and water retention;

≥ 150 average vehicle trips per day by vehicles with three or more axles.	50 µg/m^3 when determined by sampling. Performance standards do not apply when wind gusts > 25 mph, provided that certain control measures are implemented: • Earthmoving (cease active operations or pre-water > 15 minutes); • Disturbed surface areas (apply chemical stabilizers, increase watering); • Unpaved roads (apply chemical stabilizers, apply water or stop all vehicular traffic); • Open storage piles (apply water, install temporary coverings); • Paved road track-out (cover all haul trucks or maintain appropriate freeboard). Control measure requirements include: • No person shall conduct active operations without utilizing Best Available Control Measures applicable to all Construction Activity Sources to minimize fugitive dust emissions: - Importing/Exporting of Bulk Materials (stabilize material while loading to reduce fugitive dust emissions, maintain > 6 inches freeboard on haul vehicles, stabilize material while transporting, stabilize material while unloading).		• Within urban areas, prevent carryout and trackout or immediately remove when 50 feet or more from site. • For construction sites > 10 acres within rural areas, prevent carryout and trackout or immediately remove when 50 feet or more from site. • Cleanup or carryout and trackout methods (manual sweeping, rotary brush preceded by wetting, PM_{10}-effective street sweeper, flushing with water under certain circumstances).	• Use of soil to create a ramp for vehicle access over a curb is prohibited. • To prevent dust from trackout, trackout must not extend > 50 feet; and clean trackout from paved surfaces at the end of the work shift/day. • Install and maintain trackout control devices (gravel pad at 30 feet wide, 3 inches deep, and 50 feet in length; wheel shakers, wheel washers) in effective condition at all access points where paved and unpaved access or travel routes intersect. • Ensure that all exiting traffic is routed over selected trackout control devices.	• Vehicle test and development facilities and operations; and • Activities near the property line. In addition, owners/operators must prevent and control trackout, carry-out, spillage and erosion by: • Installing, maintaining and using trackout control devices at all exits onto areas accessible to the public from all work sites with a disturbed surface area > 2 acres and all work site where 100 cubic yards of bulk materials are hauled on-site or off-site per day; and implement one of the following measures: - Install a wheel washing system; - Install a gravel pad; - Install a grizzly or rumble grate; or - Pave 100 feet runup prior to public road. With respect to clean up of trackout, owners/operators must: • Clean up immediately, when trackout, etc extends a cumulative distance > 25 feet, and at the end of the workday, for all other trackout, carry-out, etc. • Operate a street sweeper or wet broom or manually sweep up deposits.

	Large Operations (active operations > 50 acres of disturbed surface area or daily earthmoving or throughput > 5,000 cu.yds.): Must implement the above measures and implement certain additional measures. The following additional control measure apply to large operations when the applicable performance standards cannot be met through implementation of the measures listed above. • Paved road track-out (cover all haul trucks or maintain appropriate freeboard). No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. All track-out shall be removed at the conclusion of each workday. No person shall conduct an active operation with a disturbed surface area > 5 acres, or with a daily import of > 100 cubic yards of bulk material without utilizing at least one of the following measures at each egress from the site to a paved public road: • Install and maintain a washed gravel pad; • Pave 100-foot approach (> 20 feet wide); • Utilize a wheel shaker/wheel spreading device consisting of raised dividers; • Install and utilize a wheel washing system.				

Imperial County	*South Coast*	*Coachella Valley*	*San Joaquin Valley*	*Clark County*	*Maricopa County*
Open Areas					
ICAPCD Rule 804 (Open Areas), amended September 11, 2018	**SCAQMD Rule 403 (Fugitive Dust), amended June 3, 2005**	**SCAQMD Rules 403 (Fugitive Dust), amended June 3, 2005; and 403.1 (Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources), amended April 2, 2004; Local Ordinances**	**SJVUAPCD Rules 8051 (Open Areas), amended August 19, 2004; and 8071 (Unpaved Vehicle/Equipment Traffic Areas), amended September 16, 2004**	**CCDAQ Sections 41 (Fugitive Dust), amended April 15, 2014; 90 (Fugitive Dust from Open Areas and Vacant Lots), amended April 15, 2014; and 92 (Fugitive Dust from Unpaved Parking Lots and Storage Areas), amended April 15, 2014**	**MCAQD Rule 310.01 (Fugitive Dust from Non-Traditional Sources of Fugitive Dust), amended January 27, 2010**
Applicability					
Open areas of 0.5 acres or more within urban areas, or 3.0 acres or more within rural areas, and containing at least 1,000 square feet of disturbed surface area, with exemptions for: • Agricultural operations subject to Rule 806, and • Recreational Off-Highway Vehicle (OHV) Use Areas on public lands subject to Rule 800.	Any activity or man-made condition capable of generating fugitive dust with certain exceptions. The requirements in the rule apply to "active operations," which refers to any source capable of generating fugitive dust, including disturbed surface area, which excludes areas that have been restored to a natural state, or have been paved, or sustained a vegetative ground cover of at least 70% of the native cover for > 30 days. Inactive disturbed surface areas refers to any disturbed area upon which active operations have not occurred or are not expected to occur for a period of 20 consecutive days.	See SCAQMD Rule 403. *Rule 403.1* Rule 403.1 requirements are supplemental to those in Rule 403 and apply to fugitive dust sources in the Coachella Valley. Rule 403.1 requires any person seeking an exemption from the Rule 403 provision prohibiting > 20% opacity or visible emissions from crossing any property line or 50 μ/m^3 impact during wind conditions in excess of 25 mph to determine when wind conditions exceed 25 mph. The determination of wind speed conditions in excess of 25 mph shall be based on criteria for facilities with and without an on-site anemometer. *Local Ordinances* Local ordinances apply to any potential dust-generating activity on a site with certain exemptions, such as activities that do not require issuance of a	*Rule 8051* Any open area > 0.5 acres within urban areas or > 3.0 acres within rural areas, and containing at least 1,000 sq. ft. of disturbed surface area, other than: • Emergency activities, utility activities, activities > 3,000 feet elevation above sea level, on-field agricultural source; • Weed abatement activity using mowing or cutting, leaving at least three inches of stubble. *Rule 8071* Any unpaved vehicle/equipment traffic area with > 50 annual average daily traffic (AADT) other than agricultural sources subject or exempt under Rule 8081. • Emergency activities, utility activities, activities > 3,000 feet elevation above sea level, on-field agricultural source; • Agricultural sources subject to or exempt from Rule 8081.	*Section 41* Applies to operation and use of raceways for motor vehicles, among other activities. *Section 90* Applies to "open areas and vacant lots," which refers to unsubdivided or undeveloped tracts of land, subdivided lots (which contain no approved or permitted buildings or structures of a temporary or permanent nature), undeveloped or partially developed lots, non-road easements, and unpaved parts of controlled access freeway rights-of-way (except those parts subject to Section 93 requirements), but excluding Normal Farm Cultural Practices or the raising of fowl or animals. *Section 92* Applies to unpaved parking lots and storage areas not regulated by Section 94, including automobile impound yards, materials handling yards,	Applies to non-traditional sources of fugitive dust, which are sources of fugitive dust that are located at a source that does not require any permit and that are one of the following types of sources: vehicle use in open areas and vacant lots, open areas and vacant lots, unpaved parking lots, unpaved roadways (including alleys), livestock activities, erosion-caused deposition of bulk materials onto paved surfaces, and easement, rights-of-way, and access roads for utilities.

		grading permit or those that require a building permit provided that the project results in < 5,000 sq. ft. of soil disturbance; line projects (pipelines, cable access lines, etc.).		equestrian staging facilities and storage yards. • Unpaved parking lot means any area > 5,000 sq. ft. that is not paved and that is used for parking, maneuvering, or storing motor vehicle, materials handling and storage yards, or vehicle and equipment storage yards.	
Control Requirements					
Must implement one or more of the following measures and limit visible dust emissions to 20% opacity: • Open Areas: Apply water or chemical suppressant to all unvegetated areas; establish vegetation on previously disturbed areas; pave or apply gravel or chemical stabilizers. • Vehicle Use in Open Areas: within 30 days of discovery, prevent unauthorized vehicle access by posting "No Trespassing" signs or installing physical barriers.	Performance standards include: • No person shall cause or allow the emissions of fugitive dust from any activity operation, open storage pile, or disturbed surface area such that: - Dust remains visible beyond the property line. - Dust emissions exceed 20% opacity. • No person shall cause or allow PM_{10} levels to increase relative to upwind concentrations by > 50 µg/m^3 when determined by sampling. Performance standards do not apply when wind gusts > 25 mph, provided that certain control measures are implemented: • Earthmoving (cease active operations or pre-water > 15 minutes); • Disturbed surface areas (apply chemical stabilizers, increase watering); • Unpaved roads (apply chemical stabilizers, apply water or stop all vehicular traffic);	See SCAQMD Rule 403. *Rule 403.1* Requirements are similar to those under Rule 403 for large operations, but the threshold for large operations is 10 acres, rather than 50 acres. For large operations (> 10 acres), control measures include: • Disturbed Surfaces/Inactive Sites (During Dust-Generating Activities: Water application and Perimeter Controls; Temporary Stabilization During Weekends, After Work Hours, Holidays: watering or chemical stabilization, and access restriction; Long-term stabilization: chemical dust suppressants and fencing, vegetation, perimeter controls); • Unpaved parking lots (equipment staging areas, employee staging areas – washed gravel maintained to depth of 4 inches or chemical dust suppressants). One of the following measures is required for inactive disturbed	*Rule 8051* Establishes a 20% VDE limit and requires implementation of one or more of the following: • Open Areas (water or suppressants to all unvegetated areas, or establish vegetation, or pave, apply gravel or stabilizers); • Vehicle Use in Open Areas (upon evidence of trespass, post "No Trespassing" signs or install physical barriers). *Rule 8071* Establishes a 20% VDE limit and requires implementation of one or more of the following: • Where > 50 AADT will occur (or 150 VDT intermittent use and each day with > 25 VDT trucks), one of the following measures must be implemented (watering, uniform layer of washed gravel, chemical dust suppressants, vegetative materials, paving, roadmix); • On each day with > 50 VDT or > 25 truck VDT, where trips stay within site, watering may be used to limit VDE to 20% opacity.	*Section 41* • Pre-approval of any off-road vehicle racing or motocross racing within the nonattainment or maintenance area; motocross racing only allowed at permanent motocross race courses, and permanent motocross race courses are subject to registration and permitting under other CCDAQ regulations. *Section 90* Owners or operators of disturbed areas > 5,000 sq. ft. that are disturbed by any means, must implement one or more of the following control measures within 30 days following discovery: • Prevent motor vehicle or off-road vehicle use by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees; and • Stabilize with gravel, dust palliatives or watering to all disturbed areas. • Owners or operators of disturbed areas > 10,000 sq. ft. must submit a dust mitigation plan.	*Vehicle Use in Open Areas and Vacant Lots*: Must not cause or allow visible emissions of PM beyond the property line and must stabilize the open areas and vacant lots on which vehicles are used to meet one of the stabilization requirements (soil crust, vegetative cover) and must implement control measures (prevent vehicle trespass by installing barriers, curbs, etc.; by posing signs, uniformly apply and maintain surface gravel to all areas disturbed by vehicle use) as necessary to meet the visible emissions and stabilization requirements. *Open Areas and Vacant Lots*: Must not cause or allow visible emissions of PM beyond the property line and must stabilize the open areas and vacant lots on which vehicles are used to meet one of the stabilization requirements (soil crust, vegetative cover) and must implement control measures (establish vegetative cover on all disturbed areas, apply dust suppressant, restore all disturbed

	• Open storage piles (apply water, install temporary coverings); • Paved road track-out (cover all haul trucks or maintain appropriate freeboard). Control measure requirements include: • No person shall conduct active operations without utilizing Best Available Control Measures applicable to all Construction Activity Sources to minimize fugitive dust emissions: - Disturbed Soil (stabilize disturbed soil throughout the construction site and stabilize disturbed soil between structures). - Staging Areas (stabilize staging areas during use, and stabilize staging area soils at project completion). - Traffic Areas for Construction Activities (stabilize all off-road traffic and parking areas, and stabilize all haul routes, and direct construction traffic over established haul routes). - Vacant Lands (where vacant lots > 0.1 acre and have a cumulative area > 500 sq. ft. that are driven over, prevent vehicle trespassing, parking or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or equivalent).	surface areas if active operations cease for more than 20 days: • Inactive disturbed surface areas (apply water to > 80% on a daily basis or apply dust suppressants sufficient to maintain a stabilized surface, or establish a vegetative ground cover within 21 days after active operations have ceased – sufficient density to expose < 30% within 90 days of planting, or some combination of above). <u>*Local Ordinances*</u> *Disturbed Vacant Lands / Weed Abatement Activities*: Owners of property with a disturbed surface area > 5,000 sq. ft. shall prevent trespassing with physical access restrictions within 30 days, or if that is not effective in establishing a stabilized surface within 45 days, must also implement one of the following measures: surface gravel or chemical dust suppressants, restoring surfaces to native condition. Any operator conducting weed abatement activities on a site that results in a disturbed surface area of > 5,000 sq. ft. shall apply sufficient water before and during weed abatement and ensure the affected area is stabilized once weed abatement activities have ceased. *Unpaved Parking Lots*: Unpaved parking lots must be paved within 6 months of ordinance adoption, or apply and maintain	• Restrict access and periodically stabilize a disturbed surface area whenever a site becomes inactive.	Owners or operators performing mechanized weed abatement or trash removal of areas > 5,000 sq. ft. are required to pre-water surface soils and to stabilize the site after operations. <u>*Section 92*</u> Owners or operators of unpaved parking lots or storage areas must implement one or more of the following control measures as necessary to comply with stabilization standards: • Stabilize all unpaved parking lots utilized more than 35 days per year by paving, dust palliatives; or stabilize with dust palliatives in travel lanes and 2” of uniformly applied gravel in parking areas. • No new unpaved parking lots shall be allowed with the exception of material storage and handling areas and only if such areas are treated with dust palliatives; or stabilized with dust palliatives in travel lanes and 2” of uniformly applied gravel in parking areas.	surface areas within 60 days following initial discovery, uniformly apply and maintain surface gravel) as necessary to meet the visible emissions and stabilization requirements. *Unpaved Parking Lots*: Must not cause or allow visible emissions of PM beyond the property line or exceed 20% opacity and must implement one of the following control measures (install and maintain pavement, apply dust suppressant other than water and install trackout control devices, or uniformly apply and maintain surface gravel) • Lesser requirements apply to unpaved parking lots serving developments used < 35 days per year or 4 or fewer units. • Clean-up of trackout is required if > 25 feet onto areas accessible to public and at the end of the day for all other trackout.

	Large Operations (active operations > 50 acres of disturbed surface area or daily earthmoving or throughput > 5,000 cu.yds.): Must implement the above measures and implement these additional measures: • Disturbed surface areas (except completed grading areas) (apply dust suppression in sufficient quantify and frequency to maintain a stabilized surface, and, if fugitive dust still visible due to wind, then water at least twice per day > 80% of unstabilized area) • Disturbed surface areas (completed grading areas) (apply chemical stabilizers within 5 working days of grading completion or apply water to > 80% on a daily basis or apply dust suppressants sufficient to maintain a stabilized surface) • Inactive disturbed surface areas (apply water to > 80% on a daily basis or apply dust suppressants sufficient to maintain a stabilized surface, or establish a vegetative ground cover within 21 days after active operations have ceased – sufficient density to expose < 30% within 90 days of planting, or some combination of above). The following additional control measure applies to large operations when the applicable performance standards cannot be met through implementation of the measures listed above.	dust suppressants, or apply and maintain washed gravel. Owners of public or private temporary unpaved parking lots (those used < 24 days per year) shall apply and maintain chemical dust suppressants prior to any 24-hour period when > 40 vehicles are expected to enter and park. The owner of such lots > 5,000 sq. ft. shall implement the disturbed vacant land requirements during non-parking periods.			

	• Disturbed surface areas (apply chemical stabilizers, increase watering).				
Imperial County	***South Coast***	***Coachella Valley***	***San Joaquin Valley***	***Clark County***	***Maricopa County***
Paved and Unpaved Roads					
ICAPCD Rule 800 (General Requirements for Control of Particulate Matter (PM_{10})), amended October 16, 2012; and 805 (Paved and Unpaved Roads), amended October 16, 2012	**SCAQMD Rules 403 (Fugitive Dust), amended June 3, 2005; and 1186 (PM_{10} Emissions from Paved and Unpaved Roads, and Livestock Operations), amended July 11, 2008**	**SCAQMD Rules 403 (Fugitive Dust, amended June 3, 2005; 1186 (PM_{10} Emissions from Paved and Unpaved Roads, and Livestock Operations), amended July 11, 2008; and 403.1 (Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources), amended April 2, 2004; Local Ordinances**	**SJVUAPCD Rule 8061 (Paved and Unpaved Roads), amended August 19, 2004**	**CCDAQ Sections 91 (Fugitive Dust from Unpaved Roads, Unpaved Alleys, and Unpaved Easement Roads), amended April 15, 2014; and 93 (Fugitive Dust from Paved Roads and Street Sweeping Equipment), amended April 15, 2014**	**MCAQD Rule 310.01 (Fugitive Dust from Non-Traditional Sources of Fugitive Dust), amended January 27, 2010**
Applicability					
<u>*Rule 800*</u> Unpaved roads and unpaved road vehicle/equipment traffic areas associated with recreational OHV use area on public lands. <u>*Rule 805*</u> Any new or existing public or private paved or unpaved road, road construction project, or road modification project, except: • Driveways serving one single-family residential dwelling, • Agricultural operations subject to Rule 806, and • Recreational OHV Use Areas on public lands subject to Rule 800.	<u>*Rule 403*</u> Any activity or man-made condition capable of generating fugitive dust. The control measures apply to active operations, which include heavy- or light-duty vehicular movement. The property line plume and 20% opacity standards, and the PM_{10} concentration impact standard do not apply to unpaved roads that are: • Used solely for maintenance of wind-generating equipment, • Are unpaved public alleys, or • Are service roads that are < 50 feet wide, within 25 feet of the property line, and have < 20 ADT.	See SCAQMD Rules 403 and 1186. <u>*Rule 403.1*</u> Requirements are similar to those under Rule 403 for large operations, but the threshold for large operations is 10 acres, rather than 50 acres. For large operations (> 10 acres), control measures include: • Unpaved road travel (surface improvements: paving of internal roadway network early in process, street cleaning, gravel; surface treatments, source extent reduction). <u>*Local Ordinances*</u> Local ordinances apply to any potential dust-generating activity on a site with certain exemptions such as agricultural operations,	Any new or existing public or private paved or unpaved road, road construction project, or road modification project, except for: • Emergency activities, utility activities, activities > 3,000 feet elevation above sea level, on-field agricultural source; • Any unpaved road segment with < 26 annual average daily vehicle traffic (AADVT), maintenance and resurfacing of existing paved roads, agricultural sources subject to or exempt from Rule 8081, emergency activities, equipment used to remove debris beyond the capabilities of PM_{10}-efficient street sweepers.	<u>*Section 91*</u> Applies to unpaved roads, which includes unpaved alleys, unpaved road easements and unpaved access roads for utilities and railroads in nonattainment or maintenance areas, but does not apply to private residential driveways, horse trails, or bike or hiking paths. <u>*Section 93*</u> Applies to paved roads and paved alleys in nonattainment or maintenance areas, excluding private residential driveways.	Applies to non-traditional sources of fugitive dust, which are sources of fugitive dust that are located at a source that does not require any permit and that are one of the following types of sources: unpaved roadways (including alleys), erosion-caused deposition of bulk materials onto paved surfaces, easements, rights-of-way, and access roads for utilities, among others. • With respect to unpaved roadways (including alleys) and easements, rights-of-way, and access roads for utilities, the requirements apply to roadways that are used by > 150 vehicle trips per day.

	<u>*Rule 1186*</u> *Paved Roads:* Applies throughout the SCAQMD. *Unpaved Roads:* Applies only within the South Coast Air Basin, and excludes unpaved roads that: • Are > 3,000 feet above sea level with < 500 ADT; • Used for emergencies related to essential service utilities; • Where public access is prohibited; • Unpaved alley; • Are owned by any governmental agency if < 5 miles of such roads and if agency implements at least one control strategy. *Livestock Operations*: Applies District-wide but excludes livestock operations < 10 acres in size.	including on-field sources and unpaved roads used solely for agricultural operations.			
Control Requirements					
<u>*Rule 800*</u> Off-Road Event or Competition greater than 50 average vehicle daily trips on any unpaved road segment or unpaved surface area dedicated to vehicle parking and unpaved traffic area: • Limit of 20% visible dust emission opacity; and • Application and maintenance of one or more of the following measures (watering, washed gravel, paving, restrict access, restrict speed limit at 15 mph, chemical suppressants, roadmix). <u>*Rule 805*</u> • Unpaved roads with ADT of 50 or more and unpaved haul and access roads, limit visible dust	<u>*Rule 403*</u> *Unpaved Roads:* Performance standards include: • No person shall cause or allow the emissions of fugitive dust from any activity operation, open storage pile, or disturbed surface area such that: - Dust remains visible beyond the property line. - Dust emissions exceed 20% opacity. • No person shall cause or allow PM_{10} levels to increase relative to upwind concentrations by > 50 µg/m^3 when determined by sampling. Performance standards do not apply when wind gusts > 25 mph,	See SCAQMD Rules 403 and 1186. <u>*Local Ordinances*</u> *Unpaved Roads*: Owners of public or private unpaved roads with ADT between 20 and 150 must take measures (signage or speed control devices) to reduce vehicular speeds to < 15 mph. Owners of < 6 miles of public or private unpaved roads shall pave each segment having ADT > 150, or alternatively apply and maintain chemical dust suppressants under a certain specific schedule.	Measures for new or modified paved roads: • 4-foot-wide (500 – 3,000 AADVT) or 8-foot-wide (> 3,000 AADVT) paved or stabilized shoulders, or curbs, are required, and with > 500 AADVT, medians must have 4-foot paved shoulders, or curbs or landscaping. • Purchases of street sweepers must be only for PM_{10} efficient street sweepers. • Within 24 to 72 hours of discovery, each city, county or state agency must remove mud/dirt (at least 1 inch thick over an area of at least 50 square feet of travel lanes) from travel lanes or restrict vehicle travel over affected road surface.	<u>*Section 91*</u> Owners or operators of an unpaved road must implement one or more of the control measures to comply with stabilization standard: • Pave or apply and maintain dust palliatives to stabilize all existing unpaved roads (includes alleys) with > 150 vehicles per day. Prohibition of new unpaved roads or alleys in public thoroughfares after 2000. Stabilization observations not to exceed 20% opacity. Silt loadings not to exceed 0.33 ounces/sq. ft. or silt content not to exceed 6%. <u>*Section 93*</u> • Shoulders/medians of new paved roads must be	*Unpaved Roadways (Including Alleys)*: Must not cause or allow visible emissions of PM to exceed 20% opacity and must implement one of the following control measures (pave, apply dust suppressant other than water, or uniformly apply and maintain surface gravel). *Erosion-Caused Deposition of Bulk Materials onto Paved Surfaces*: Must implement the following control measures (remove all deposits within 24 hours of discovery or prior to the resumption of traffic on pavement, where pavement has been closed to traffic, and dispose

emissions to 20% opacity and apply one or more of the following measures (pave, apply chemical stabilizers, apply gravel, wetting, permanent road closure, restrict unauthorized vehicle access). • No new unpaved roads within any area with a population of 500 or more unless the road meets the definition of a temporary unpaved stabilized road. • 10-year compliance period to convert all unpaved roads to stabilized unpaved roads (i.e., meets the requirements for a "stabilized surface" as determined by a specific test method). • Canal roads with ADT of 20 or more, limit visible dust emissions to 20% opacity and apply one or more of the following measures (stocking of triploid grass carp in canals to reduce maintenance vehicle trips to remove aquatic weeds, install remote control delivery gates, implement silt removal program, permanent road closure, conversion of canal to pipeline, lining canals to eliminate maintenance needs, canal bank surface maintenance). • Unpaved traffic areas larger than one acre and with ADT of 75 or more, limit visible dust emissions to 20% and apply one or more of the following measures (pave, apply chemical	provided that certain control measures are implemented: • Earthmoving (cease active operations or pre-water > 15 minutes); • Disturbed surface areas (apply chemical stabilizers, increase watering); • Unpaved roads (apply chemical stabilizers, apply water or stop all vehicular traffic); • Open storage piles (apply water, install temporary coverings); • Paved road track-out (cover all haul trucks or maintain appropriate freeboard). Control measure requirements include: • No person shall conduct active operations without utilizing Best Available Control Measures applicable to all Construction Activity Sources to minimize fugitive dust emissions: - Road Shoulder Maintenance (apply water to unpaved shoulders prior to clearing and apply chemical suppressants or washed gravel to maintain a stabilized surface after maintenance) - Traffic Areas for Construction Activities (stabilize all off-road traffic and parking areas, and stabilize all haul routes, and direct construction traffic over established haul routes)	Owners of > 6 miles of public or private unpaved roads shall stabilize each segment > 150 ADT with pavement or chemical dust suppressants under a certain specified schedule. Owners of any public or private road shall not allow visible dust emissions > 20%, or extend more than 100 feet in any direction, and shall either not allow silt loading > 0.33 ounces/sq. ft. or not allow the silt content > 6%. *Paved Roads*: Any owner of paved roads shall construct all new or widened paved roads in accordance with curbing, paved or treated road shoulders with minimum widths (4 ft for 500 to 3,000 ADT and 8 ft for > 3,000 ADT) and paved or treated medians. Any owner of public or private paved roads shall remove or cause to be removed any erosion-caused deposits > 2,500 sq. ft. within 24 hours after receiving notice or prior to resumption of traffic where the paved area has been closed to vehicular traffic.	• City, county or state agencies must pave or stabilize shoulders along a certain number of paved roads on an annual basis. Measures for unpaved road segments: • On any unpaved road segment > 26 AADVT, 20% VDE limit applies and one of the following measures must be implemented (watering, uniform layer of washed gravel, chemical dust suppressants, roadmix, paving); • Within urban areas, no new unpaved roads are allowed unless the road meets the definition of "temporary unpaved road" (not more than 6 months use over consecutive 3-year period). • City, county and state agencies must pave a certain number of miles of unpaved road per year.	constructed with paved/chemically treated/or graveled shoulders/median at a minimum width of 4 ft. • Curbing adjacent to the travel lane is an acceptable alternative to shoulder paving treatments. • Owners/operators of existing paved roads that are not in compliance with the standards for stabilized shoulders/ medians are required to upgrade all nonconforming paved road segments within 365 days of discovery. • Operators of street sweeping equipment are required to acquire or contract to acquire SCAQMD Rule 1186-certified street sweeping equipment for all paved road and parking lot sweeping. • Use of dry rotary brushes and blower devices for the removal of dirt, rock or other debris from a paved road or paved parking lot is prohibited without the use of sufficient wetting to limit the visible emissions to not greater than 20% opacity.	of deposits so as not to cause another source of fugitive dust). *Easements, Rights-of-Way, and Access Roads for Utilities*: Must not cause or allow visible emissions of PM to exceed 20% opacity and must implement one of the following control measures (pave, apply dust suppressant other than water, uniformly apply and maintain surface gravel, or install locked gates at each entry point).

stabilizers, apply and maintain gravel, wetting). • New or modified paved roads must include curbs or include paved shoulders and medians (2 to 6 feet depending on ADT) or landscape and maintain with grass or other vegetative ground cover.	- Unpaved Roads/Parking Lots (stabilize soils to meet the applicable performance standards and limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots). For large operations (> 50 acres of disturbed surface area or > 5,000 cu.yds. daily earth-moving or throughput): • Water all roads used for any vehicular traffic at least once per every 2 hours of active operation; • Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 mph; or • Apply a chemical stabilizer to all unpaved road surfaces in sufficient amount and frequency to maintain a stabilized surface. The following additional control measures apply to large operations when the applicable performance standards cannot be met through implementation of the measures listed above: • Unpaved roads (apply chemical stabilizers, apply water or stop all vehicular traffic); • Paved road track-out (cover all haul trucks or maintain appropriate freeboard). <u>*Rule 1186*</u> *Paved Roads:*				

	• Any owner or operator of a paved public road with ADT > 500 on which there is visible roadway accumulation (deposits > 200 sq. ft., but excluding vehicular track-out) shall begin removal through street cleaning within 72 hours of notification with completion as soon as feasible. • Agencies that contract to acquire street sweeping equipment or street sweeping services for routine purposes shall acquire or use only certified street sweeping equipment. • Any owner or operator of a public or private paved road with projected ADT > 500 shall construct all new or widened roads with curbs or 4-foot (500 - 3,000 ADT) or 8-foot (> 3,000 ADT) paved outside shoulders, and paved (or equivalent) medians (unless < 45 mph speed limits). *Unpaved Roads:* Any owner or operator of an unpaved road in the South Coast Air Basin shall annually treat unpaved roads with > average ADT of unpaved roads in its jurisdiction by either: • Paving at least 1 mile of road; • Applying chemical stabilization to 2 miles of road; or • Taking one or more of the following actions on 3 miles of road (install signage for < 15 mph, speed control devices every 500 feet).				

	The requirements for unpaved roads were required to have been completed by 2006.				
Imperial County	***South Coast***	***Coachella Valley***	***San Joaquin Valley***	***Clark County***	***Maricopa County***
Agricultural Sources					
ICAPCD Rule 806 (Conservation Management Practices), amended October 16, 2012	**SCAQMD Rule 403 (Fugitive Dust), amended June 3, 2005; Rule 403 Agricultural Handbook; and SCAQMD Rule 1186 (PM_{10} Emissions from Paved and Unpaved Roads, and Livestock Operations), amended July 11, 2008**	**SCAQMD Rule 403 (Fugitive Dust), amended June 3, 2005; 403.1 (Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources), amended April 2, 2004; Rule 403 Coachella Valley Agricultural Handbook, and SCAQMD Rule 1186 (PM_{10} Emissions from Paved and Unpaved Roads, and Livestock Operations), amended July 11, 2008; Local Ordinances**	**SJVUAPCD Rules 4550 (Conservation Management Practices), amended August 19, 2004; and 8081 (Agricultural Sources), amended September 16, 2004**	**CCDAQ Section 41 (Fugitive Dust), amended April 15, 2014**	**AAC R18-2-610.01 (Agricultural PM General Permit for Crop Operations; Maricopa County PM Nonattainment Area), amended July 2, 2015; and R18-2-611.01 (Agricultural PM General Permit for Animal Operations; Maricopa Count Serious PM Nonattainment Area), amended April 5, 2016**
Applicability					
All agricultural operation sites in Imperial County.	<u>*Rule 403*</u> Any activity or man-made condition capable of generating fugitive dust with the exception of, among others: • Dairy farms; • Confined animal facilities (raising of > 3,360 fowl or 50 animals where feeding is other than grazing) < 1 acre; • Agricultural vegetative crop operations < 10 acres; • Agricultural vegetative crop operations > 10 acres provided that person responsible for operations voluntarily implements the conservation management practices in the Rule 403 Agricultural Handbook. <u>*Rule 1186*</u>	See SCAQMD Rules 403 and 1186. In Coachella Valley, the Rule 403 Coachella Valley Agricultural Handbook applies.	<u>*Rule 4550*</u> Agricultural operation sites within San Joaquin Valley, except for: • Agricultural operation sites where the total acreage is less than 100 acres (excluding the Animal Feeding Operation (AFO) and exempted lands); • Exempted lands include woodland and wasteland not under cultivation or used for pasture, agricultural parcels > 3,000 feet above sea level, agricultural parcels used for propagating young trees for transplanting, providing grazing rangeland or pasture, or forestry; • The following sources within an agricultural operation site: AFOs with < 500 mature dairy cows, or < 190 cattle, or < 55,000 turkeys,	Applies to agricultural operations, use and operation of livestock arenas and feed lots, among other activities.	<u>*AAC R18-2-610.01*</u> Commercial farmers within the Maricopa County PM nonattainment area. <u>*AAC R18-2-611.01*</u> Commercial animal operator within a Serious PM Nonattainment Area.

	Applies to livestock operations whose contiguous bounded areas > 10 acres. Livestock operations are defined as operations directly related to the raising of > 50 animals for the primary purpose of making a profit or for a livelihood.		or < 125,000 chickens (excluding laying hens), or < 82,000 laying hens, or other types of AFOs. *Rule 8081* Off-field agricultural sources (outdoor handing, storage and transport of bulk materials; paved road, unpaved road; or unpaved vehicle/equipment traffic area), except for: • Emergency activities, utility activities, activities > 3,000 feet elevation above sea level, on-field agricultural source; • On-field agricultural sources, unpaved road segments with < 75 vehicle trips for that day; felling and removal of trees from forest stands; other exemptions consistent with exemptions in other Regulation VIII rules.		
Control Requirements					
Persons owning or operating an agricultural operation site > 40 acres must implement at least one of the conservation management practices (CMPs) from each of the specific activity CMP groups unless they implement the Conservation Tillage CMP: • Land preparation and cultivation (alternative tilling, bed/row size spacing, chemigation, combined operations, conservation irrigation, cover crops, equipment changes, fallow land, integrated pest control, mulching, night farming, non tillage, organic pesticides, precision farming or transgenic crops);	*Rule 403* Performance standards include: • No person shall cause or allow the emissions of fugitive dust from any activity operation, open storage pile, or disturbed surface area such that: - Dust remains visible beyond the property line. - Dust emissions exceed 20% opacity. • No person shall cause or allow PM_{10} levels to increase relative to upwind concentrations by > 50 µg/m^3 when determined by sampling. Performance standards do not apply when wind gusts > 25 mph,	See SCAQMD Rules 403 and 1186. *Rule 403.1* Any person involved in agricultural tilling or soil mulching activities shall cease such activities when wind speeds > 25 mph.	*Rule 4550* Owners/operators must submit a CMP Application for each agricultural operation site, and implement at least one CMP from the CMP list for each of the applicable CMP categories for each agricultural parcel of an agricultural operation site: • Cropland – Land Preparation /Cultivation (alternate till, bed-row size or spacing, chemigation, combined operations, conservation irrigation, conservation tillage, cover crops, equipment changes/technological improvements, fallowing land, floor management, integrated pest management, mulching,	Requires taking of reasonable precautions to abate fugitive dust from becoming airborne, and defines fugitive dust becoming airborne as a visible plume extending > 100 yards from point of origin or beyond the nearest property line, whichever is less; visible dust emissions on an unpaved road at a construction site being used by haul trucks; visible dust emissions generated by vehicles traveling over mud and dirt carried out to a paved road near or adjacent to a construction site.	*R18-2-610.01* Requires implementation of at least two best management practices from each category: • Tillage, harvest or ground operation activities (chemical irrigation, combining tractor operations, equipment modification, green chop, integrated pest management, limited harvest activity, limited tillage activity, multiyear crop, cessation of night tilling, planting based on soil moisture, precision farming, reduced harvest activity, reduced tillage system, tillage based on soil moisture, timing of a tillage operation, transgenic crops, transplanting, shuttle

• Harvest activities (baling/large bales, combined operations, equipment changes, green chop, hand harvesting, fallow land, night harvesting, no burning, pre-harvesting soil preparation, shed packing, shuttle system) • Unpaved roads and unpaved traffic areas (chips/mulches, gravel, paving, restricted access, speed limit, track-out control, water application, field windbreak, and more stringent measures where ADT > 20 trucks or 50 total vehicles); • Cropland/Other (alternate tilling, application efficiencies, baling/large bales, bulk materials control, chemigation, fallow land, grinding/chipping, integrated pest management, irrigation power units, mulching, night farming, no burning, non tillage, organic practices, permanent crops, reduced pruning, soil amendments, soil incorporation, sulfur - reduction of dusting, surface roughening, transgenic crops, wind barrier); • Windblown dust control (when preparing a field for planting, minimize the time that newly tilled soil is smooth and dry by leaving the field surface with large clods for as long as possible and bedding and planting the field as soon as possible once it no longer has large clods; for fields that are in between crops or permanently fallow – cover crop, conservation tillage, crop residence management, cross	provided that certain control measures are implemented: • Earthmoving (cease active operations or pre-water > 15 minutes); • Disturbed surface areas (apply chemical stabilizers, increase watering); • Unpaved roads (apply chemical stabilizers, apply water or stop all vehicular traffic); • Open storage piles (apply water, install temporary coverings); • Paved road track-out (cover all haul trucks or maintain appropriate freeboard). Any person who operates or authorizes the operation of a confined animal facility shall implement the applicable conservation management practices: • Manure Handling (cover manure prior to removing off-site, and spread the manure before 11:00 a.m. and when wind conditions are less than 25 mph, and (applicable to commercial poultry ranches) utilize coning and drying manure management by removing manure at laying hen houses at least twice per year and maintain a base of > 6 inches of dry manure after clean out, or utilize frequent manure removal by removing the manure from laying hen houses at least every several days and immediately thin bed dry the material.		night farming, non tillage, organic practices, precision farming, time of planting, transgenic crops, transplanting). • Cropland - Harvest (baling/large balers, combined operations, continuous tray, equipment changes, fallowing land, floor management, green chop, hand harvesting, night harvesting, no burning, pre-harvest soil preparation, shed packing, shuttle system/larger carrier). • Cropland – Other (alternate till, application efficiencies, baling/large balers, bulk materials control, chemigation, conservation irrigation, cover crops, fallowing land, grinding/chipping/shredding, integrated pest management, irrigation power units, mulching, night farming, no burning, non tillage, organic practices, permanent crops, reduced pruning, soil amendments, soil incorporation, sulfur – reduction or elimination of dusting, surface roughening, transgenic crops, wind barrier). • Cropland – Unpaved Roads (chips/mulching, organic materials, polymers, road oil, sand, gravel, mechanical pruning, paving, restricted access, speed limits, track out control, water, wind barrier). • Cropland – Unpaved Vehicle/Equipment Traffic Areas (chips/mulches, organic materials, polymers, road oil, sand, gravel, paving, restricted		system/larger carrier, conservation tillage); • Noncropland and commercial farm roads (access restriction, aggregate cover, wind barrier, critical area planting, organic materials cover, reduce vehicle speed, synthetic particulate suppressant, track-out control system, watering); • Cropland (wind barrier, cover crop, cross-wind ridges, chips/mulches, multi-year crop, permanent cover, stabilization of soil prior to plant emergence, residue management, sequential cropping, surface roughening); • Significant Agricultural Earth Moving Activities (leveling activities on a commercial farm that disturb the soil > than 4 inches below the surface, or the creation of ditches, canals, ponds, etc.) (pre-watering > 50% of field capacity, water during activity (> 30% soil moisture content), limit activities if high risk of high dust per county forecast). • General permit is required for commercial farmers. <u>*R18-2-611.01*</u> Requires implementation of at least two best management practices from each category: *For commercial dairy operations:* • Arenas, Corrals, and Pens (use free stall housing, provide shade in corral, provide cooling in corral, cement cattle walkways to milk barn, groom manure surface, water misting systems,

wind stripcropping, field windbreaks, ridge roughness, surface roughening, wind barrier).	• Feedstock Handling (utilize a sock or boot on the feed truck auger when filling feed storage bins). • Disturbed Surfaces (maintain at least 70% vegetative cover on vacant portions of the facility, or utilize conservation tillage practices or manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, or apply dust suppressants in sufficient concentrations and frequencies to maintain a stabilized surface). • Unpaved Roads (Restrict access to private unpaved roads either through signage or physical access restrictions and control vehicular speeds < 15 mph, or cover frequently traveled unpaved roads with low silt content materials, or treat unpaved roads with water, mulch, chemical dust suppressants or other cover to maintain a stabilized surface). • Equipment Parking Areas (apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface, or apply material with low silt content). *Rule 1186* Any owner or operator of livestock operations shall: • Cease all hay grinding activities between 2:00 and 5:00 p.m. each day, if visible emissions extend > 50 feet from a hay grinding source, and		access, speed limits, track out control, water, wind barrier). • Poultry – Manure Handling & Storage (time of manure spreading, cleanout frequency, outdoor storage). • Poultry Operations – Feeding (boot or sock). • Poultry Operation – Open Areas (vegetation, reduced tillage, windblocks, dust suppressants). • Poultry Operation – Unpaved Roads (gravel, access restriction, pavement, dust suppressants, speed reduction, track out control, vegetation). • Poultry Operations – Unpaved Vehicle/Equipment Traffic Areas (access restriction, gravel, pavement, dust suppressants, vegetation). • Dairy Operations – Corral/Manure Handling (sprinkling of open corral, frequent scraping or manure removal, freestall housing, fibrous layer in dusty areas, pull-type manure harvesting equipment, scraping/harrowing, shaded areas in open corrals). • Dairy Operations – Overall Management/Feeding (bulk materials control, feeding near dusk, wet feed during mixing, place wet material in feedwagon first before mixing, downwind shelterbelts/boundary trees). • Dairy Operations – Unpaved Roads (dust suppressants, gravel, speed reduction, access restriction, pavement, track out control, speed bumps,		use drag equipment to maintain pens, pile manure between cleanings, feed green chop, keep calves in barns or hutches, do not run cattle, apply a fibrous layer, wind barrier). • Animal Waste (and Feed) Handling and Transporting (feed higher moisture feed to dairy cattle, store and maintain feed stock, covers for silage, store silage in bunkers, cover manure hauling trucks, do not load manure trucks with dry manure when wind exceeds 15 mph). • Unpaved Access Connections (install signage to limit vehicle speed to 15 mph, install speed control devices, restrict access to through traffic, install and maintain a track-out control device, apply and maintain pavement in high traffic areas, apply and maintain aggregate cover, apply and maintain synthetic particulate suppressant, apply and maintain water as a dust suppressant). • Unpaved Roads or Feed Lanes (install engine speed governors on feed truck to 15 mph, install signage to limit vehicle speed to 15 mph, install speed control devices, restrict access to through traffic, apply and maintain pavement in high traffic areas, apply and maintain aggregate cover, apply and maintain synthetic particulate suppressant, apply and maintain water as a dust suppressant, use appropriate vehicles such as electric carts or small utility vehicles instead of trucks, apply

	• Treat all unpaved access connections and unpaved feed lane access areas with either pavement, gravel (maintained to a depth of 4 inches), or asphaltic roadbase.		appropriate equipment and vehicles). • Dairy Operations – Unpaved Vehicle/Equipment Traffic Areas (dust suppressants, gravel, access restriction, speed reduction, pavement, appropriate equipment and vehicles). • Feedlot Operations – Pens/Manure Handling (sprinkle, frequent scraping or manure removal, fibrous layer in working areas, pull-type manure harvesting equipment, shade for animal). • Feedlot Operations – Overall Management/Feeding (bulk materials control, feeding near dusk, wet feed during mixing, place wet material in feedwagon first, downwind shelterbelts/boundary trees). • Feedlot Operations – Unpaved Roads (dust suppressants, gravel, access restriction, speed reduction, pavement, track out control, appropriate equipment and vehicles). • Feedlot Operations – Unpaved Vehicle/Equipment Traffic Areas (dust suppressants, gravel, access restriction, speed reduction, pavement, appropriate equipment and vehicles). <u>*Rule 8081*</u> • Measures for handling of bulk materials, storage of bulk materials, on-site transporting of bulk materials, off-site transporting of bulk materials,		and maintain pavement or cement feed lanes). *For commercial beef cattle feedlots:* • Arenas, Corrals, and Pens (concrete aprons, provide shade in corral, add moisture to pen surface, manure removal, pile manure between cleanings, feed higher moisture feed to beef cattle, control cattle during movements, use drag equipment to maintain pens, apply a fibrous layer, wind barrier). • Animal Waste (and Feed) Handling and Transporting (feed higher moisture feed to beef cattle, add molasses or tallow to feed, store and maintain feed stock, bulk materials, use drag equipment to maintain pens, cover manure hauling trucks, do not load manure when wind exceeds 15 mph). • Unpaved Access Connections (install and maintain a track-out control device, apply and maintain pavement in high traffic areas, apply and maintain aggregate cover, apply and maintain synthetic particulate suppressant, apply and maintain water as a dust suppressant). • Unpaved Roads or Feed Lanes (install engine speed governors on feed truck to 15 mph, install signage to limit vehicle speed to 15 mph, install speed control devices, restrict access to through traffic, apply and maintain pavement in high traffic areas, apply and maintain

			outdoor transport of bulk materials are essentially the same as shown above for Rule 8031; • Measures for paved and unpaved road segments are essentially the same as shown for Rule 8061; • Measures for unpaved vehicle/equipment parking and traffic (> 50 AADVT) are essentially the same as those in Rule 8071; • Measures for carryout and trackout are essentially the same as those in Rule 8041.		aggregate cover, apply and maintain synthetic particulate suppressant, apply and maintain water as a dust suppressant, apply and maintain oil on roads or feed lanes). *For commercial poultry facilities:* • Arenas, Corrals, and Pens (Housing) (clean fans, louvers, and soffit inlets in a commercial poultry facility, use no bedding, control vegetation on building exteriors, add moisture through ventilation systems, house in fully enclosed ventilated buildings). • Animal Waste (and Feed) Handling and Transporting (remove spilled feed, store feed, add oil or moisture to the feed, use enclosed feed distribution system, use flexible discharge spout, minimize drop distance, enclose transfer point, clean floors and walls in a commercial poultry facility, clean aisles between cage rows, stack separated manure solids, maintain moisture in manure solids, use of a rotary dryer to dry manure waste). • Unpaved Access Connections (install speed control devices, restrict traffic access, install and maintain a track-out control system, install signage to limit vehicle speed to 15 mph). • Unpaved Roads or Feed Lanes (install engine speed governors on feed trucks to 15 mph, install signage to limit vehicle speed to 15 mph, install speed control devices, restrict traffic access,

					apply and maintain aggregate cover, apply and maintain synthetic particulate suppressant, apply and maintain water, apply and maintain oil on roads or feed lanes) . *For commercial swine facilities:* • Arenas, Corrals, and Pens (Housing) (house in fully enclosed ventilated buildings, use no bedding, use a slatted floor system, clean fans, louvers, and soffit inlets in a commercial swine facility, control vegetation on building exteriors, add moisture through ventilation system). • Animal Waste (and Feed) Handling and Transporting (remove spilled feed, store feed, add oil or moisture to the feed, use enclosed feed distribution system, use flexible discharge spout, minimize drop distance, enclose transfer points, clean pens, floors and walls in a commercial swine facility, clean aisles between pens and stalls, store separated manure solids in a wind-blocked area, stack separated manure solids, maintain moisture in manure solids, maintain liquid lagoon level). • Unpaved Access Connections (install speed control devices, restrict traffic access, install and maintain a track-out control system, install signage to limit vehicle speed to 15 mph). • Unpaved Roads or Feed Lanes (install engine speed governors on feed trucks to 15 mph, install

					signage to limit vehicle speed to 15 mph, install speed control devices, restrict traffic access, apply and maintain aggregate cover, apply and maintain synthetic particulate suppressant, apply and maintain water, apply and maintain oil on roads or feed lanes, wind barrier). • General permit is required for commercial animal operators.